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# AMERICAN BEE JOURNAL

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AUGUST, 1928

WHAT DETERMINES THE SEX  
OF THE EGG —CHAS. DADANT

A BETTER WAY TO USE FORMALIN  
VAPOR —A. V. SMALL

BEEKEEPING IN NORTHERN ONTARIO  
—J. M. MUNRO

LIQUEFYING HONEY WITHOUT DAM-  
AGE TO CANS —G. G. GRISWOLD

**FREE**

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**FREE**

Have you been reading the accounts of our treatment of Ultra Violet Rays to queen bees in the Beekeepers' Item? These treatments have been conducted for the past fourteen months. An eight-page booklet will be mailed to you free describing this upon request. The queens show an average increase in egg-laying of 30 per cent and the offspring extremely gentle.

Here is an opportunity to receive an Ultra Violet treated queen free. All those purchasing \$25.00 or more of bee supplies from us at our low catalog prices will receive one of these treated queens without cost. Write for our 1928 catalog if you do not have one handy.

The following prices are for Ultra Violet treated Italian queens, which we guarantee are worth the extra cost above that of the untreated queens, which is 50c each, and if, after you have used these queens this season and do not agree with us that they are worth this extra cost and a great deal more, we will refund this treatment charge to you without question.

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One Queen .....	\$ 1.75
Six Queens .....	9.60
Twelve Queens .....	18.00

These can be furnished in either Golden Italians or Three-banded Italians, as you choose. Two-day delivery guaranteed.

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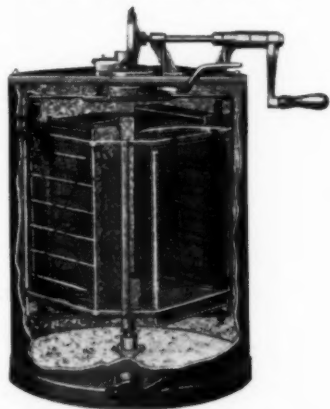
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## Save the Honey



A New Invention Just Out



PATENT PENDING

Basket in place in Reversible  
Extractor

We will have ready for shipment August 1st our new "**Back-Lot**" two-frame Honey Extractor. This Extractor throws all the honey out of the honey cells and leaves the cells intact. 100% efficient. Strongly built and easily operated. Will extract two frames at one time and do it quickly.

SIZE	POCKETS	SHIPPING WT.	PRICE
No. 5	9 $\frac{5}{8}$ x16 in.	34 lbs.	\$10.75
No. 9	12x16 in.	40 lbs.	13.75

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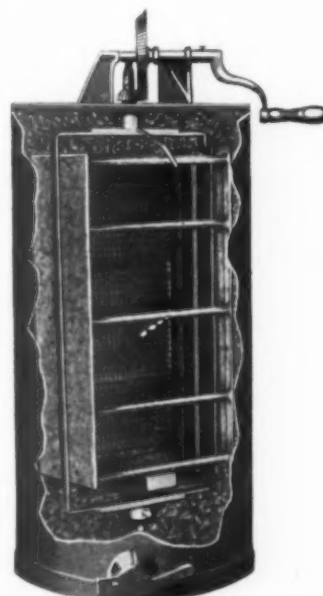
**Cappings Extracting Baskets** will fit any size or make of Reversible Honey Extractor. They hook over the reel between the comb pockets and opposite each other evenly balancing the reel. Easily put in and as easily taken out. Pour your cappings in the baskets filling them about half full, whirl your reel high speed for one-half minute, and it will throw out all the honey, leaving the wax cappings dry. From 3c to 6c worth of the finest honey reclaimed from cappings from each Standard frame and the wax saved without the labor and trouble of melting.

Capacity of each basket two gallons. Shipping weight 5 lbs. Sold in pairs, price \$3.50 per pair. Ready for shipment August 1st. Money back guarantee.

Beekeepers send us your orders direct if your Dealer does not sell our goods.

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### Back-Lot Two-Frame Honey Extractor



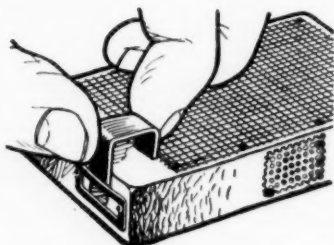
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WAPAKONETA, OHIO

## QUEEN INTRODUCTION SIMPLIFIED



### DIRECTIONS FOR INTRODUCING

Before giving this queen to a colony be sure it is queenless. It is best not to remove the old queen until the time of introducing the new one; but if several days have elapsed, be sure to remove every queen-cell. Place cage on top or between frames; if on top of the frames put the wire cloth down next to the bees. The bees should gnaw away the pasteboard nailed over one end, eat out the candy left in cage, and release the queen. If she arrives dead, return her in cage, notify us and we will replace.

N. B.—Remove U-shaped tin on end of cage as illustrated. This permits bees from colony to enter cage through queen-excluding zinc after candy is eaten out of hole, and help release queen through opposite end of cage.

Our new mailing and introducing cage does three things:

1. It gets queens to destination in good condition unless the weather is too beastly hot.
2. It allows attendant bees in cage with queen to escape through queen-excluding zinc when candy is eaten out of small hole, before queen is liberated.
3. It permits some of the bees from colony to which queen is being introduced to enter cage through queen-excluding zinc and mingle with queen. The queen thus acquires colony odor before being liberated from cage and is more likely to be accepted. This is because she is not excited and is ready to begin laying.

### ROOT QUALITY QUEENS

When you once know what they can do for you in increased honey profits you will want no other kind.

### QUEEN PRICES

	1	10	50	100
Untested	\$1.10 ea.	\$1.00 ea.	\$ .85 ea.	\$ .75 ea.
Tested	2.25 ea.	2.00 ea.		
Select Tested	5.00 ea.			



The A. I. Root Company  
Westside Station

Medina, Ohio



## GLASS AND TIN HONEY CONTAINERS

2½-lb. cans in cartons of 100	\$4.00 car.
5-lb. pails in cartons of 50	3.50 "
10-lb. pails in cartons of 50	5.00 "
60-lb. tins, NEW, 2 tins per case	1.00 case
60-lb. tins, USED, 2 tins per case	.35 "
160-lb. kegs (the ideal container for both Buckwheat and Clover Honey)	1.20 each

### GLASS JARS WITH GOLD LACQUERED CAPS

16-oz. Honey Capacity, 2 doz. per carton	\$1.20 car.
3-lb. or Quart Capacity, 1 doz. per carton	.90 "

### SPECIAL HAZEL-ATLAS TALL JARS

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16-oz. Honey Capacity, 2 doz. per carton	1.35 "
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### COMB HONEY SUPERS—10-FRAME

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No. 3, for 4x5x1½ sections, at \$6.50 per 5 k. d.

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Wood and Corrugated Cases  
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**Queens      Queens      Queens**

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## BERRY'S RELIABLE THREE BANDED QUEENS

SHIPMENT BY RETURN MAIL

All queens of select quality. We kill the culls.

### Prices of Our Queens:

1 to 10—60c each; 10 to 50—55c each; 50 to 100 and up—50c each. All queens warranted purely mated. Select Tested Queens—\$1.00 each. Tested for pure mating, etc.

Queens wings clipped free of charge on request.

Letters just lately to hand: "Have kept bees for fifty years and tried many strains of bees, but find yours best of all."

"Have had your strain for fifteen years and they are fine. I never fail to get a crop of honey."

### Our Strain Is the Best to Be Had—and Why?

Because for thirty-five years we have been selecting from the best and otherwise improving our Three-Banded Strain of Italian bees. The writer, M. C. Berry, has devoted his life from twelve years of age to the bees. Therefore, today we have a strain of Italians unexcelled for gentleness, disease resistance and honey production. Having several branches for honey production located in Nebraska, Iowa, Wisconsin, and Manitoba, Canada, gives us an excellent opportunity to test our strain personally. All queens that show marked wintering and honey production qualities, etc., we have returned to us for breeding purposes. No disease. Safe arrival guaranteed.

**M. C. BERRY & COMPANY**

P. O. Box 697

Montgomery, Alabama

## Golden Queens

Beautiful, gentle and  
good honey gatherers

Select (one grade) young laying queen, \$1.00 each; five for \$4.00; ten or more, 75c each

We have Major's safe introducing cage, which is also self-introducing, in which we guarantee safe introduction. The price is 50c additional in this cage. All queens mailed in large six-hole cages unless smaller size preferred.

**No Disease. Health Certificate**

Safe arrival and satisfaction guaranteed

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**The Golden Apiaries**

LETOHATCHIE, ALABAMA

H. N. Major, Mgr.

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When You are in the Market for

**Sections, Hives, Supers,  
Frames, Etc.**

We are prepared to give  
you fair treatment and  
prompt service at all times

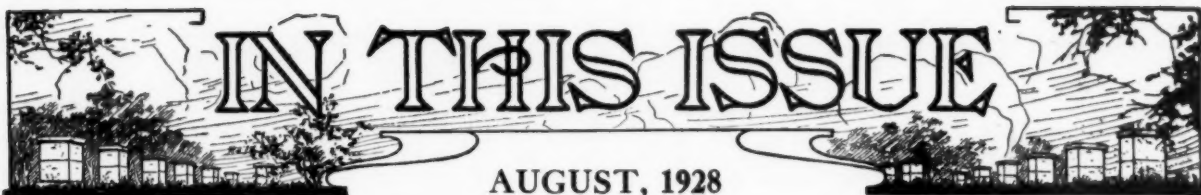
Write for our Catalog

It's Free

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**August Lotz Company**

Boyd, Wisconsin



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## Our Cover Picture

This little investigator comes to us from D. M. Cuthbertson, Woodingdean, Brighton, England. He also furnished the picture for the June number. It is unusual to have such likely subjects and we are especially proud of the fact that a subscriber was interested in the "Old Reliable" enough to pose and send them.

## Thrifty Queens

**50c each**

*In Lots of 10 or more*

**Smaller Lots 60c each**

Safe arrival is guaranteed in the U. S., Canada and Cuba. Pure mating and satisfaction guaranteed the world over.

Over a third of a century of careful breeding and selecting insures you of THRIFTY three banded Italian queens that please. An output of thousands of queens per month assures you of good delivery.

**W. J. FOREHAND & SONS**

Fort Deposit, Alabama

Remember, THRIFTY bees are guaranteed to please

## BARGAINS

### Quality Honey Containers

5 lb. Pails

10 lb. Pails

60 lb. Square Cans

Glass Ware

Comb Honey Shipping Cases

Write for our 1928 Price Sheet

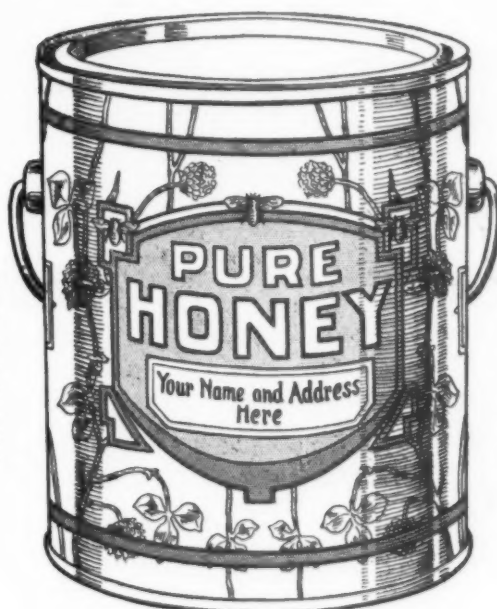
**LEAHY  
MANUFACTURING  
COMPANY**

HIGGINSVILLE, MISSOURI

# Honey Containers for Every Need

## Lithographed Pails— Finest on Market

Two different styles. Style A is rustproof, enameled throughout, four colors. Style C, two colors, enameled outside only. Made 2½, 5 and 10 lb. sizes. Sample 5 lb. pail, any style, 25c postpaid. Name and address printed, (not stenciled), on orders of 100 or more.



## Cost Little More than Plain Pails and Labels

In the long run it is economy to use lithographed pails and their advertising value alone cannot be overestimated. The housewife will use these beautiful pails over and over again, so they are a constant source of advertising for the beekeeper. Since first introduced, these pails have proved popular in line with modern marketing.

## New Reduced Prices

All f. o. b. Hamilton, Ohio, in lots of 100 or more of one size

Write for price on 500 or more of all styles priced.	Packed in dust-proof corrugated cartons	
	4 colors enameled throughout "A"	2 colors enameled outside only "C"
2½ lb. cans.....	\$ 7.05 per 100	\$ 6.25 per 100
5 lb. pails.....	11.60 " "	10.20 " "
10 lb. pails.....	15.60 " "	13.65 " "

## PLAIN FRICTION TOP PAILS



Clean  
Well Made  
Well Packed

Carried on hand in carloads. Packed in dustproof cartons so they will reach you in good condition. In quantities of 1000 or more special prices can be made for shipment to you direct from factory.

PRICES f. o. b. Hamilton, Ill., or Keokuk, Iowa

Mailing wt.					
		10	50	100	wt. 100
2½ lb. cans.....	6 lbs.	\$ .60		\$3.60	31 lbs.
5 lb. pails.....	8 lbs.	1.00	\$3.20	6.40	54 lbs.
10 lb. pails.....	12 lbs.	1.50	4.70	9.40	90 lbs.

## GLASS JARS

Clear  
Fluted  
Pretty



Designed to make honey show up beautifully so it attracts attention on the grocers' shelves. On orders making 5000 pounds shipping weight or more we can make special prices for shipment direct from factory.

Prices

3½ oz. jars in cartons of 24 (wt. 7 lbs.).....	\$ .75
½ lb. jars in cartons of 24 (wt. 12 lbs.).....	.85
1 lb. jars in cartons of 12 (wt. 12 lbs.).....	.60
1 lb. jars in cartons of 24 (wt. 22 lbs.).....	1.10
2 lb. jars in cartons of 12 (wt. 17 lbs.).....	.80

For large quantities direct from factory, write for SPECIAL PRICES

Get our Complete Fall Price List including items below

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Comb Honey Shipping Cases  
Comb Honey Cartons and Wrappers  
Extracting Equipment

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You are within the Fourth Postal Zone of Lewis anywhere East of the Rocky Mountains



## Honey Containers

### Tin and Glass

In offering the lowest prices we have been able to make in years on glass and tin honey containers, we are offering the best quality. Also, you have a wider choice of sizes and assurance that we will do everything in our power to keep stock at our five warehouses ready for shipment on your orders.

Pails 5 lb. 12/c, 10 lb. 6/c and 5 gallon containers are in wood boxes, all other including all glass jars in heavy fibreboard cartons.

Very low prices on quantities CL or LCL. Write for free complete fall catalog.

#### TIN CONTAINERS—PLAIN—NOT LITHOGRAPHED

Cat. No.	Pack	Size	FOB	FOB	FOB	FOB
			Watertown	Sioux City	Lynchburg or Albany	Texarkana
K 63—Cans	24/c	2 1/2-lb.	\$1.05	\$1.10	\$1.10	\$1.20
K650—Cans	100/c	2 1/2-lb.	3.50	3.60	3.65	3.80
K650—Pails	12/c	5-lb.	1.05	1.05	1.10	1.15
K 65—Pails	50/c	5-lb.	3.15	3.20	3.25	3.35
K 66—Pails	6/c	10-lb.	.80	.85	.85	.90
K 69—Pails	50/c	10-lb.	4.55	4.70	4.80	5.05
K624—Cans	1/c	5-gal.	.60	.65	.65	.70
10 Cans	1/c	5-gal.	5.70	6.00	6.00	6.50
K626—Cans	2/c	5-gal.	1.05	1.10	1.10	1.15
20 Cans	2/c	5-gal.	10.00	10.50	10.50	11.00

#### HART FLUTED GLASS JARS F. O. B. OUR WAREHOUSES

K648—3 1/2-oz. glass jars, cartons of 24, weight 7 lbs., 24 for	\$ .75
K632—1/2-lb. glass jars, cartons of 24, weight 12 lbs., 24 for	.85
K631—1-lb. glass jars, cartons of 24, weight 22 lbs., 24 for	1.10
K630—2-lb. glass jars, cartons of 12, weight 17 lbs., 12 for	.80

#### LITHOGRAPHED TIN CONTAINERS F. O. B. HAMILTON, OHIO

	4-color design	2-color design	Canco design
K646—2 1/2-lb. Cans	100 @ \$ 7.05	100 @ \$ 6.25	100 @ \$ 7.55
K645—5-lb Pails	100 @ 11.60	100 @ 10.20	100 @ 12.35
K644—10-lb. Pails	100 @ 15.60	100 @ 13.65	100 @ 16.45

HONESTLY MADE ————— HONESTLY SOLD ————— HONESTLY PRICED

# LEWIS BEEWARE

STANDARD OF THE BEEKEEPING WORLD

## G. B. LEWIS COMPANY

Established 1874

HOME OFFICE AND WORKS WATERTOWN, WISCONSIN

BRANCHES — ALBANY, NEW YORK — LYNCHBURG, VIRGINIA — TEXARKANA, ARKANSAS — SIOUX CITY, IOWA



Vol. LXVIII—No. 8

Hamilton, Illinois, August, 1928

Monthly, \$1.00 a Year

## Is It the Will of the Queen, or the Cell, Which Determines the Sex of the Egg?

Charles Dadant, from the *Revue Internationale d'Apiculture*, July, 1886  
Translated from the French by Kent Louis Pellett

THE citation of the solitary wasp which Mr. Bertrand makes in his note at the end of my article, a wasp which lays male eggs in the cells less well furnished, and female eggs in the cells better filled, far from weakening my theory that it is the cell which determines sex, comes on the contrary to its support; as in the case of this wasp and in that cited by Professor Cook, the mother stretches her abdomen more to lay males than females; then with wasps, as with bees, the conditions of laying are different for the different sexes.

Mr. Bertrand thinks that the bee, in laying either males or females, obeys its instinct. This term, which is abused, is too indefinite; it is com-mo-dious by its elasticity, but it states nothing precisely.

When a newly born animal seeks the breast of its mother, they say it obeys its instinct. But when the white sprout of a potato forgotten in the cellar is directed toward the window for a little of the day that filters through, does it also obey its instinct?

This tendency of the young animal toward the breast of its mother, of the young shoot toward the light, is the result of the same law, the law of attraction, which fills in the uni-verse an immense role, one that is too little observed. . . .

Not only do the plants obey this law when they grow in the direction of the light, but also when they send their radicles into pieces of manure buried in the ground, when they incline their stamens toward their pistil to fertilize them.

Not only is it attraction which di-rects the young animal; it is attrac-tion which also excites the mother to allow it to suck. This reciprocal attraction is the love of the mother for the son, of the son for the mother.

It is attraction also which, under the name of appetite, excites the ani-mals to seek food to sustain them; which even causes man to overcome his horror of blood to kill and skin the animals and partake of their flesh.

It is attraction which, under the name of desire, urges the animals into the acts of reproduction to con-serve the race.

It is still attraction which oper-ates the chemical combinations.

Finally, it is attraction which sus-tains our globe, as the other planets, around the sun; which maintains the moon around the earth; which holds us on the earth, as well as the other objects around us.

Imagine this force stopping sud-denly. Everything scatters, bumps together. We have chaos. Attrac-tion is order, is life, is progress. . . .

Another law still is that any ani-mal which obeys its desire, conse-quently the law of attraction, is re-paid by pleasure. The words, "to satisfy a desire," are well chosen.

You see a cow suckling her calf; she feels as much pleasure as it. It is not for progeny that she desires to meet the male; it is not to make the calf grow that she suckles him. No. She accomplishes these acts without knowing the aim of nature, which has given her these desires and which pays by pleasure, by satisfaction, her obedience to this universal law.

Search well, you will find nowhere in nature another lever than attrac-tion, which all beings must obey to fulfill the role assigned to them.

If then, returning to the mother bee, we wish to know the secret of her laying of different sexes, we should not lose sight of this law of universal attraction, but take it for a guide.

As soon as the queen is nubile she

feels the desire to meet a male. She does not reason about this desire. She does not say, "I am going to find a male; he will fill my sperma-theca with spermatozoids that I will distribute, one by one, on my eggs to change the sex, as, if I do not fecundate them, they will hatch males; now the males are incapable of doing the work of the hive and of amassing the provisions." These are the thoughts which would come to her mind if we admit that she knew the use of spermatozoids, and that she laid workers or males, according to the needs of the colony. She is then, as all other females, without other motive than her desire, and she ceases her flights only when her de-sire is satisfied.

If we remark further that, with the bees, the act of fecundation is double, the meeting of the male and the impregnation of the egg, we should admit that the desire is double also and results in pleasure, since nature employs no other means to gain her ends. The queen, in laying, is then excited by her desire to fecundate all her eggs, but, as a width, or more probably, a depth of cell not beyond a certain limit is indispensable to this second act of fecundation, the queen searches for the small cells, and never complains of finding in the hive only the nar-row cells. She complains, on the contrary, if she finds only the wide ones, as repeated experiences have shown.

She bothers herself so little about finding only little cells that the race of bees would be extinguished, for lack of males to fecundate the young queens, if the workers did not inter-vene, unknowingly also, to prevent her from always operating the muscles of her spermatheca, by pre-paring large cells where this move-

ment is, if not impossible, at least very difficult.

As the act of the fecundation of the eggs of the bees is double, copulation and impregnation, the raising of the young bees is double also, the laying and the feeding; and the life of the workers has a double phase: nurses at first, they are harvesters later.

The queen is only half mother. She can lay, but she cannot care for her progeny. How could she when she lays thousands of eggs a day? It is the young bees which, moved by their desire, are specially charged with this care. In this aim nature has given them a pair of glands which furnish to the larvæ the milk of the first age. Later, these glands commence to dry up, their desire changes and the nurses are transformed into harvesters; then other glands function in their turn, to furnish the saliva which should transform the nectar into honey. This change, which has modified their aptitudes, has then at the same time changed their desires.

A woman who nurses her child is altogether devoted to him, has no other preoccupation. Becoming a grandmother, her ideas and her aptitudes are modified; she thinks of saving, of accumulating. Thus does the worker bee in the two phases of its life.

Not only do the young workers care for the brood, but they feed the queen also and surround her with attentions; the latter makes them comprehend that she does not love the large cells and they construct for her only small ones at first. As long as she waits for this construction, to lay, not a large cell will be built; but the day when her laying cannot follow the construction, whether because her fecundity fails or because they work too quickly, the workers being numerous and the harvest abundant, from that day the old workers, the harvesters, which think especially of provisions, provide against delay by constructing large cells, honey cells that one sees at the upper part of the combs. Then, if the harvest stops, the laying will stop also; the brood will hatch, leaving a large quantity of empty cells; and if an abundant honey harvest follows, during which the queen will fill with eggs all these empty cells, the subsequent combs, constructed before she waits for the new constructions to lay there, will be large cells. This explains how one finds sometimes, even in the midst of naturally built combs of a hive, one or two combs with large cells.

To those who contest this influence, this kind of authority of the queen over the workers, I will ask that they explain to me why a colony deprived of its mother builds only large cells. I know that they say

that the workers, foreseeing that the queen they raise will need to be fecundated, make large cells for lodging males there. But, on one side, the workers do not know the sex of the larvæ that they feed, as one sees them sometimes choose male larvæ to try to make queens. And, on the other side, not only is it necessary in order to raise males that they be laid, but also, even if they would be as fast as the large

cells are prepared these males would arrive too late, since they take twenty-four to twenty-five days to hatch, while the queens only take sixteen.

It seems to me that the law of attraction I have developed explains very well the problem of the construction of cells of different sizes, and the laying of the queens, whose progeny is modified by the circumstances which accompany this laying.

## Development of the Queen Larva

By Jay Smith

THE writer was much interested in reading the article by W. W. Alpatov in the March number of the *American Bee Journal*. Some features of the development of the queen larvæ we have known in a practical way and are pleased to know the exact cause of the underdevelopment of queens brought about by improper feeding. It seems from this article that when a queen larva is underfed the resultant queen possesses a smaller number of egg tubules. This would bear out another statement that I have made and one which is not in accord with the experience of some beekeepers. I refer to the matter of size of queens. I have maintained that an exceptionally prolific queen must of necessity be large. Others have stated that some of the best queens were small. A medium size queen might do fairly well for a while, but if a large surplus of honey is obtained from such a queen, and this may frequently be the case, I believe it is because such a queen had an exceptional opportunity and brought her working force on the scene at just the right time. But I cannot conceive of a small queen being extra prolific. In the article referred to it would show that a small queen has a less number of egg tubules and therefore could not produce as many eggs as a larger queen with more tubules.

By improper feeding, Mr. Alpatov has produced bees intermediate between queen and worker.

In my book, "Queen-Rearing Simplified," I call attention to such queens that have been produced in worker cells, and I call them "pygmy queens." Some of these were reared in the queen mating hives. I believed that when the laying queen was removed the bees started queen-cell. When a ripe cell was given them the bees tore down the queen-cells as soon as the virgin from the ripe cell emerged. But some of the worker larvæ had been fed royal jelly a little longer than worker larvæ should be fed, yet not enough for queens. The workers treated them as workers and they were allowed to hatch. The result was that the

bee was midway between queen and worker. The head and thorax was much like a worker, but the abdomen was more like that of a queen in shape and color. Some of these queens would come up missing at mating time and others would remain in the hive as workers. In case a larva was reared in a very small queen-cell and received little jelly, the resultant queen would sometimes mate and lay very sparingly and was soon superseded. When learning to rear queens, I did not appreciate the necessity of having an abundance of well fed bees, and upon several occasions I reared real workers in queen-cells. After the cells were drawn out a trifle they were built at right angles, so the larvæ were in a horizontal position. This brings up another point: Does the position of the larva have anything to do in determining whether or not it will be a queen or worker?

My experience has been that a good queen cannot be reared from a worker larva over two days old. I do not know whether it is that the food is changed in character or because of the less amount the larva receives. I believe the food of the queen larva is changed continually; maybe only in the water content, but jelly fed to a queen larva about ready to be sealed is not suitable for a larva just hatched. I have tried "double grafting" to some extent—that is, I took queen-cells that were ready to be sealed, carefully lifted out the larvæ and put in their place larvæ about twelve hours old. Few were accepted, and those that were accepted were given fresh jelly much thinner than that already in the cells.

In my opinion, the reason that a younger larva makes a larger queen is due to the fact that the nurse bees have a longer period in which to stock the cell with jelly. When the conditions are exceptionally good for feeding, the bees will place jelly in both queen-cells and worker-cells a whole day before the larva hatches. In queen-cells the jelly does not touch the egg, at least at first. Bruce Lineburg (*January Gleanings*, 1925)

gives us some interesting data on this matter and shows that an egg will not hatch till the bees place a little jelly on it. This probably softens the shell so the larva can break its way out.

When the larva gets to be three or four days old, it eats the jelly faster than the bees can feed it; therefore if the nurse bees do not get started at putting the jelly into the cell at an early stage, the larva eats all the food and is dwarfed from "undernourishment."

What a wonderful food royal jelly is! Those who have investigated tell us that, beginning with the hatching of the egg, a larva increases 2500 times in five days. If a human baby

### Mr. and Mrs. Jacques Verret

This is the photo of Mr. and Mrs. Jacques Verret, of Charlesbourg, Quebec. Mr. Verret is postmaster and beekeeper, besides keeping a seed store. They live over their store and are pictured at the foot of the stairway leading to their home.

At the International Congress of Beekeepers of 1924, some sixty or seventy beekeepers were invited to the Verret home and ate a wonderful banquet, served by a dozen or more of Mr. Verret's nieces, pretty and active French-Canadian girls. Mr. Verret is proud of the fact that the French-speaking population of Canada is on the increase. He says there are three million French-speaking Canadians, descendants of the sixty thousand who landed there about the year 1760. Mr. Verret has about 150 colonies of bees and markets large crops of honey.



at birth weighed ten pounds and increased at the same ratio, at five days it would weigh twelve and one-half tons. Mothers may be thankful they do not have to nurse such a baby. If they did, their difficulties would be multiplied in case of twins!

If royal jelly only caused rapid growth it would not be so wonderful, but it retards development in some cases, for the queen lacks the organs that produce royal jelly and she lacks pollen baskets and other organs. Therefore this royal jelly retards development in some cases and hastens it in others. Why this magical food should give the queen a curved sting instead of a straight one, as in the case of the worker, is a mystery. This food must be very quieting on the nerves also, for a queen will not sting except when another female of her own kind is present, when, of course, she is to be excused.

### Apiary Practice and Honey Marketing Studies

Work on profitable practices in the operation and management of apiaries, as a preliminary step to the study of economics of honey production, has been started by the United States Department of Agriculture. The practice study is being undertaken by the Division of Bee Culture of the Bureau of Entomology, and the Division of Farm Management and Costs of the Bureau of Agricultural Economics. Other divisions of the Bureau of Agricultural Economics have under way studies of the important problem of honey marketing.

The first practice study has already been started in the Intermountain Region where conditions seem favorable for inaugurating it at this time. It is felt that the work can be done in that region more easily, and therefore at less expense, than in some of the other beekeeping regions because of the presence of the Intermountain Field Station, the large number of colonies, and the relatively high percentage of commercial beekeepers. The limited amount of money now available is being used for this part of the work. It is planned to continue the investigation in two or more other important honey-producing regions until a thorough study has been made of practices and systems of management under various typical beekeeping conditions.

It is needless to say that such investigations as planned cannot be carried out successfully without the active cooperation of the beekeepers, beekeepers' organizations, and the bee press. Beekeepers or organizations particularly interested are invited to write to the Division of Bee Culture or the Division of Farm Management and Costs, as it is desired to

make as many personal contacts as possible in the course of the work. Bookkeeping systems showing the results of profitable practices are especially desired at this time, particularly from beekeepers in the Intermountain Region.

### Michigan Continues Good Work

A recent letter from H. M. Krebs, Chief Apiary Inspector for Michigan, states that Michigan has again gone over the top with another special appropriation of \$24,000 to continue eradication work on American foul-brood in that state.

Mr. Krebs now has 67 men in the field and these men are working in crews of eight, with one man in charge.

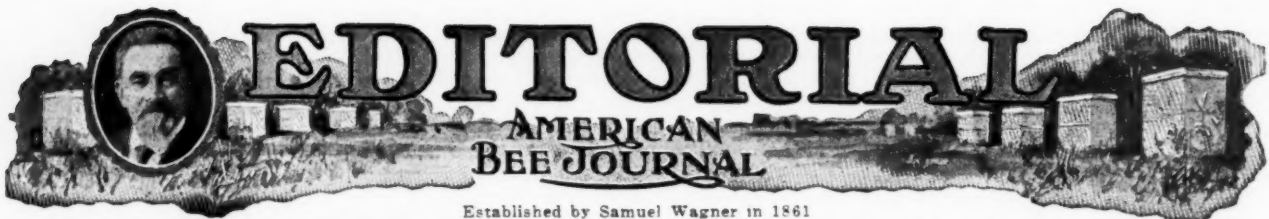
The work is carried on by the men working in pairs and excellent results are being obtained. We hope to give a more detailed report of this in the fall.

### Comb Honey at Fargo Goes Up

Fred Marquette, standing beside this buzzing tower, looks like he does not expect you to believe that one colony ever grew to match one of Barnum's wonders.

If we are not misstating this is a Caucasian colony and produced 502 sections of comb honey and 40 pounds of extracted honey in 1927. If that isn't right, Fred will tell us by return mail.





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## Taking Off Honey

Some of us wait till the crop is at an end to take off the surplus. Others take it off as fast as it is produced, whenever it is ripe. The latter have little trouble with robbers because when the crop ends there is not much honey left in the supers. But in a protracted crop, it is difficult to do this, especially if the honey is very thin when harvested and needs to be ripened.

In any case we need to remember that when the crop is cut off, we will have to reckon on the presence of robber bees. Bee escapes are fine to use in such conditions. But we must have bee-tight supers, else the robbers will get in. A good method to prevent the robbers from hunting at the joints of the supers is to close those joints with wet clay, sticky mud. The beekeeper who has kept bees many years is aware of the fact that his supers become worn at the corners from prying them off with a chisel or a hive-tool. Wet clay helps, temporarily, to make them bee tight. This is no new device, for the old-time beekeeper stopped the cracks in his skeps with a mixture of clay and cow dung. The cow dung serves to make the clay more resistant. The French skep hive man even had a name for this mastic. He called it "pourget". This was made of clay, ashes and cow dung.

There is a mastic which is quick-drying made of litharge, linseed oil, sand and cement. This may be used where we want a lasting cement.

If there has been rain all over the country, as there has been with us here in western Illinois, much of the honey will be slow to ripen. In such a case, if you have extracted honey that is too thin, do not put it away without first ripening it. It should be heated slowly over water.

## Honey Dumpers

On page 334 of July is an article on the above topic which has caused a number of beekeepers to write us. One of them, a lady, says that she is probably in that class, of honey dumpers, but that she does not know at what price to offer her honey, since the American Bee Journal does not give a market price.

We have just received a letter from John Fairall, of Des Moines, on the same subject, suggesting that local beekeepers should get together, put their honey on the market in one lot, with a good salesman, and afterwards divide the returns. This is a good idea, but not altogether satisfactory, for some beekeepers have customers whom they must retain by selling them personally. So there would be an unwillingness to follow that idea to full conclusion.

But it is very important for beekeepers to get together. Each of the beekeepers tries to do his own producing and selling separately. It is a bad plan. We should have meetings and try to realize that the only way to succeed is to help one another and to have a clear understanding on the prices to ask. We should establish a wholesale and a retail price for our goods and stay with those prices. We like to do without the middleman. But

the middleman is necessary. He keeps the goods on hand and secures sales that we would lose entirely if it were not for him. He cannot afford to keep his store and pay rent, and employ clerks, and deliver goods at the home of the consumers if he is not allowed a profit. As honey is not a fast-selling article like flour, soap, potatoes, etc., he must have a larger profit per cent with honey than with those goods.

Let the beekeepers arrange to have local meetings and compare crops, approximate the amount for sale and establish a price, both retail and wholesale, and stay with the price. If it is found too high or too low, have another meeting and make a change. But do not play false to each other. Let the price rule your actions. This is the only way to make the crop pay. There are honey producers for whom the crop is just an accident. Those producers must be either attracted to your meetings or bought out, and it would not be a bad plan if the real honey producers should unite to get a good salesman to buy up the lots that go a-begging, to prevent price cutting. We have passed through all sorts of competition ourselves and know how it feels to be undersold by someone who simply tries to get rid of his product at any price.

## Introducing Young Queens

This is the proper month to give new queens to the colonies which have old queens or whose queens are failing. You must not take it for granted, however, that the queen of a hive is old, because you have not replaced her for several years, unless that queen is clipped and you know positively that she is the same queen. It often happens that colonies replace their queen without the knowledge of the beekeeper, who may imagine that he still has the same queen. Dr. Miller wrote: "Remember that in the natural course of events every queen is superseded by the bees." But there are exceptions to this rule and that is why we should remove the old queens and replace them with younger ones.

Some people advise to replace queens every year. I don't. My reason for advising against it is that, if a queen is good the first year, she will probably be fully as good the second year, and when you change a queen that you know, for a new queen, you are changing a known quantity for an unknown.

We believe that each beekeeper can replace his worn-out queens without much trouble. Yet some large honey producers consider that they can more profitably buy their queens than rear them. If you buy queens to replace the old ones, August is a good time. Count the queens, but do not kill any old queens before you have received the new ones. It is always easier to introduce a queen to a colony that is in a normal condition than to a queenless one.

If you rear your queens, make one or two of your best colonies queenless or give brood from your best colonies to one or two that you will have made queenless. To get plenty of queen-cells it is a good plan to do as Dr. Miller did, get your best queens to lay eggs into new combs that are not yet fully built, as there are more queen-cells built on such combs than on old full combs. Besides, it is easier to cut queen-cells out of a new comb than out of an old one. When the queen has laid and there are both eggs and young larvae in the comb, give it to a colony which you have made queenless. On the ninth day thereafter, count the queen-cells and make as many colonies queenless as you have queen-cells, less one that will remain in that hive. On the tenth day, insert the queen-cells.

Of course you must be sure that there are plenty of

drones. If you have followed the ordinary practice of giving drone combs to some of your best colonies, you will probably have plenty of drones. Otherwise it would be necessary to see to it that drones are reared and the colonies must be fed in order to secure plenty of drones, unless the honey crop is still on. The drones should be reared so as to hatch a week or so before the queens do. It is quite a profitable thing to have drones and rear queens at a time when your careless neighbors have none in their hives, for you will get more satisfactory matings.

The Doolittle method, the Alley method, the Perret-Maisonneuve method of queen rearing are, of course, very good, but the ordinary beekeeper cannot be expected to fit himself out for those methods, and that is why I recommend the method that I used with success for years. Queens reared in August or September, in our Middle States, are quite sure to have a good stock of young bees for winter and be ready for work for the following year. But it is well to have a few spare queens to replace those that may fail or get lost in their wedding flight.

## The Arrangement of the Apiary

It is a nice thing to have a well-arranged apiary. But it may be arranged too regularly for the good of the young queens when they go for their mating flight. If you have 20 or 30 hives in a regular row, without trees or shrubbery to designate each hive, so that the bees may not make a mistake and go into the wrong entrance, you may lose a number of queens when they come home from mating. Mr. Langstroth wrote on this subject:

"If a traveler should be carried, in a dark night, to a hotel in a strange city, and, on rising in the morning, should find the streets filled with buildings precisely alike, he would be able to return to his proper place only by previously ascertaining its number, or by counting the houses between it and the corner. Such a

faculty, however, was not given to the queen; for who, in a state of nature, ever saw a dozen or more hollow trees or other places frequented by bees, standing close together, precisely alike in size, shape and color with their entrances all facing the same way, and exactly the same height from the ground!"

We must bear in mind that the queen rarely leaves the hive and that, although she examines it when leaving, she may not be able to return to the exact spot if the hives are too similar. We believe that the loss of many queens is due to this fault. Worker bees make the same mistake, but the matter is of much less importance in their case.

## Replacing Old Queens

We have written somewhere in these columns that we do not like to replace a good queen by a new one, because in so doing we replace something we know to be good by an unknown quantity. One of our apiarists now reports to us that, in replacing an entire apiary of queens two years old, the past season, with young queens from one of our most reliable breeders, he failed to get a satisfactory result. The new queens are inferior to the ones replaced, although it is impossible to tell why.

We therefore repeat the advice: Do not replace a good, prolific queen without good reason. But do not hesitate to replace a queen if she is failing in activity, even if she is only a year old, or less.

## Stings Cure Rheumatism

The "Apicoltura Italiana" in its turn publishes a statement on "apitherapy", or cure by bee stings. It is from Cav. F. F. Saverio, of Laurignano. He was suffering from sciatica and tried three bee stings. It cured him temporarily, but it came back the following spring, when he decided to try ten stings on the suffering limb. This was three years ago and it has never returned.

# Honey Packing United to Create National Distribution

First Attempt at National Advertising and Selling, Results from Purchase of Packing Concerns by Big Food Company.

For many years we have heard expressed the hope on the part of one and another who were specially interested in the orderly marketing of honey that there might some day be launched a company that would be big enough—financially, industrially—to undertake the purchasing, packing, advertising, and distribution of this last unexploited natural food—honey. Such an organization, with ample capital, national distribution, and the vision of the unlimited possibilities of putting honey in its right position as the peer of sweets, might not only redound to the benefit of itself, but also to the benefit of the beekeeper and to the industry at large.

This is what has come to pass, from the preliminary news we have just been given and which we have every reason to believe correct. This news is that very large capital, with extensive food interests, has gotten back of honey, to make it a food item, so far as possible, in every American home.

This big food concern has already definitely acquired by outright purchase several of the largest honey-packing plants east of the Mississippi River, merged them, and is now further extending its packing facilities and its purchasing power. We are not at liberty to disclose for the present the details of purchase, nor the personnel of the purchasing company, but suffice it to say that one of the purchases is that of the celebrated Airline honey, which has been until this transfer packed by the A. I. Root Company of Medina, Ohio.

Knowing, as we do, the amount of capital and food selling ability back of this honey merger, we are prepared to believe one of the head officials' statements made to us, as follows:

"This new corporation recognizes the tremendous field for merchandising, development and consumption of

quality table honey in America, and feel this so strongly that we are even concerned about the future supply of honey not being sufficient for our needs. As will be announced about October 1, our company is amply provided with a great deal of capital to develop the honey industry in the right manner, using every possible correct means to make honey, to the extent it is proper, the predominating sweet of every family. We recognize the great advantages from a food value standpoint that honey has over the generally accepted but far less meritorious sweets. The products of the new corporation will be of such standard that the producer of high quality honey will have a constant and steady outlet for his production of such honey, and need not fear any loss by not being able to market this product when finished, which condition has caused such chaos in the past."

We cannot but pay tribute here to the efforts of the A. I. Root Company, in the past, in their efforts, through Airline and otherwise, to put honey on a real merchandising basis. Their advertisting has been far from inconsequential; its effect has undoubtedly helped wonderfully.

But consider, if you will, that this new food group, trained as they are in food merchandising, with distribution channels already established and ample capital, may now continue from the point where Airline and the other packers have stopped, and you can visualize what this new move may mean.

As before stated, we are not at liberty to announce more definitely the line-up of this new concern, perhaps before October 1, since it is still in the developing and making. Through this new development, however, and the effect it may have on the future of honey marketing, we feel, from the information at hand, a great hope, that some of the fondest dreams of beekeepers at large may come to pass.

# A Better Way to Use Formalin Vapor

By A. V. Small



A. V. Small, Augusta, Kansas, standing beside the liquefying tank which he also uses to treat combs with formalin vapor.

(Since publishing the article by Jay Smith on formalin-vapor for treating combs from American foulbrood colonies, in the April and May issues, there has been a good deal of correspondence, requesting more information both about details of the method and modifications suggested by the writer.

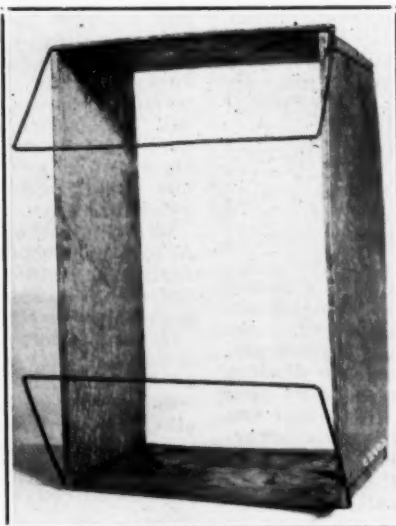
Many of the inquiries ask whether it would be possible to make a tight box, compartment or room in which diseased brood and super combs can be placed right in the hive bodies and the formalin-vapor injected into the room from the outside. Although only a few trials of this way of handling the vapor have been made, they have been apparently satisfactory. The vapor can be quickly injected into the treating compartment by alcohol-formalin or water-formalin over a stove, the formalin being contained in a tight boiler, similar to those used with uncapping knives.

Mr. A. V. Small of Augusta, Kansas, has done a great deal of experimenting with various vapor treatments for foulbrood, including alcohol-formalin, and we believe his method is quicker than the one originally proposed by Jay Smith. His vapor process was described in *Gleanings* for December, 1927. The present description is an elaboration of his first experience, after more complete trial.

Coincident with this article by Mr.

Small, Jay Smith has also sent us a description of a formalin-vapor method which he is working out, also employing heat and a tight compartment. This will be given in a later issue.—G. H. C.)

A good many years ago, I exposed a foulbrood comb to a humid atmosphere, then injected hydrochloric gas and later neutralized with ammonia.



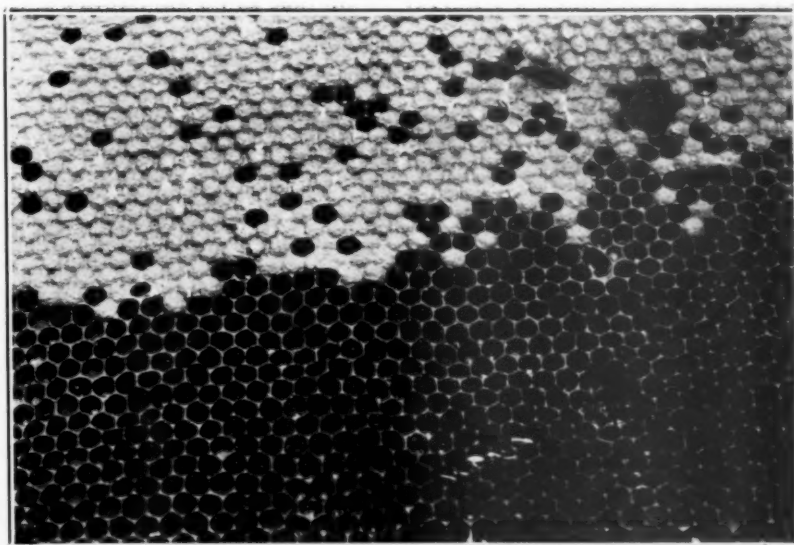
A metal basket, about the size of a hive body, with handles for carrying. Combs can be placed in these baskets and set in the vapor tank, making their removal much easier.

The contents of the foulbrood cells were changed in appearance, but I did not check on the combs for sterility. I did check ammonia vapor and this does not kill the germs. Another fellow injected chlorine gas, and that did not kill germs. Hydrochloric gas has a terrible kick and I believe it will kill, but it is hard to use. Formalin-vapor is the nicest to handle and I believe that this method or any of the variations is worth pushing.

The perfecting of a good alcohol-formalin apparatus does not require brains, but is just a matter of horsepower, and the more people there are working on it, the sooner it will be brought to a high level. The process is very simple. Bodies and combs are placed in a closed compartment. I use a tank with the bottom barely covered with alcohol-formalin, double strength. By warming the bottom of the tank a few degrees, the combs receive a vapor bath without actually becoming wet.

In the picture at the head of this article, I am standing beside the tank in which we vapor-treated our combs last year. We use this tank during the bottling season, partially to liquefy sixty-pound cans of honey, before putting the honey in the final process tanks.

Water vapor at a temperature of about 180 degrees F. gives its latent heat to the cans of honey, gradually



Healthy brood in a comb treated with formalin vapor. Originally almost every cell contained a scale or dead remains.

liquefying the honey. We run two tanks every twenty-four hours while bottling. The water vapor comes from three inches of water in the bottom of the tank, heated by a small gas burner under the tank.

Last year, in treating bodies of combs, the same method was used, putting the bodies with the foulbrood combs in the tank and using alcohol-formalin instead of water, vaporizing at 110 to 120 degrees F. About one gallon of alcohol-formalin was poured in the bottom of the tank. The bodies did not touch the liquid but were supported on a rack.

I believe a concentrated vapor is necessary. This may be secured in a number of ways. A large evaporating surface is perhaps the easiest, especially if the surface is located at the bottom and slightly warm. Injecting warm vapor might be just as good and, in the case of a tight honey house, or compartment, perhaps more convenient. Five gallons of liquid vaporized at the rate of a gallon per day ought to be sufficient in a good, tight honey house.

After carefully watching the vapor through glass and noting its condensation on comb, I am convinced that alcohol is an improvement over plain water. Water condenses in separated globules with minute contact points on the surface of the wax, while alcohol condenses as an even coating, contacting the entire surface of the comb, and penetrates rapidly.

Where a honey house or a large compartment is used, the vapor can be injected through a pipe.

A. D. Hardy of Powell, Wyoming, suggests the making of a honey storage - formaldehyde - fumigating room. His plan is a metal room with an outside retort and a back drain for condensation with a heating system to maintain a good, active temperature in the vapor room. I be-

lieve the simplest method would be to have a depression in the floor and heat under the depression.

The process is all right, any way it is used. I have sterilized dry foulbrood combs with warm alcohol-formalin vapor and submitted them for microscopical examination. They were reported entirely sterile.

For a small treating tank, my idea is to have a metal body of the right dimensions to hold about two hives of combs. The hives are to be set in a metal tray with a depression in the center and a trough at the edge. The trough can be filled with motor oil and the metal body or tank inverted over the hive bodies with its edge in the trough of motor oil, thus making an air-tight room.

The depression in the center of the bottom tray is filled with alcohol-formalin which is heated by raising the temperature with a small lamp

set underneath. The combs and bodies being cool will get a vapor bath and as a result of the difference in the temperature there will be condensation all over the combs. This is important.

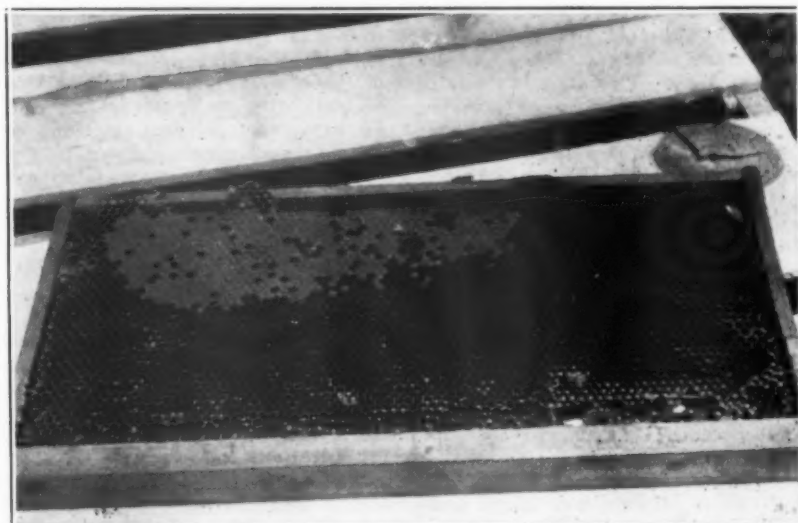
A frame work covered with two-ply roofing and painted with ordinary paint inside is air-tight and is impervious to the vapor. This will make a good tank.

This year, I am going to try the following technique: After the brood emerges from foulbrood combs, I shall remove the bottoms and covers, paint the edges of the hive bodies with alcohol-formalin and stack the bodies, containing the combs, in the honey house. Then I will paste strips of heavy paper all over the cracks, using alcohol-formalin and ordinary paperhanger's paste.

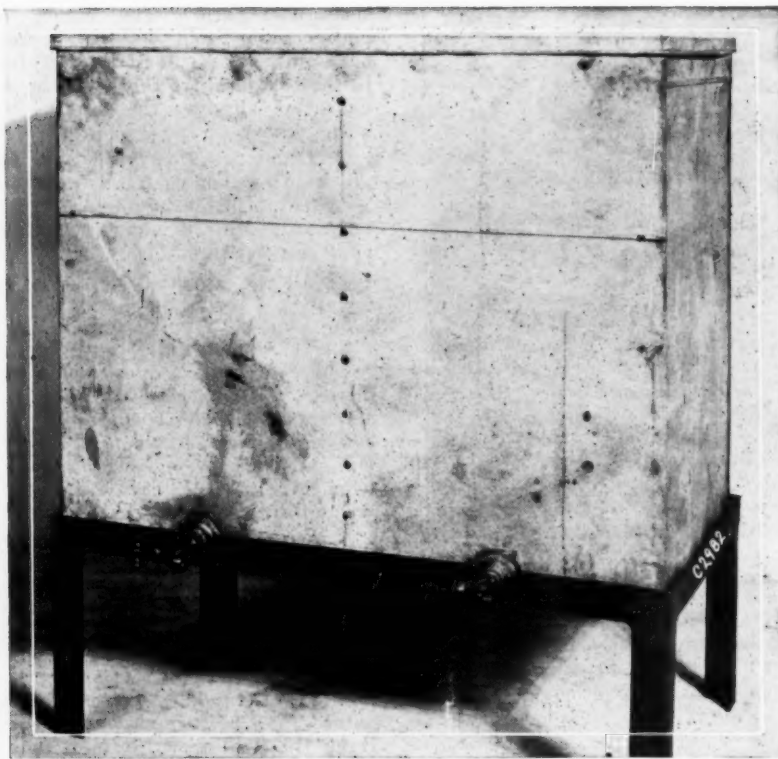
When the material is dry, the outside of the paper can be painted with boiling hot beeswax. Put a pie tin filled with alcohol-formalin at the bottom and another at the top. The stack must be air-tight and treatment continued a week or so. The bottoms and covers should be scraped off and painted, or boiled, as preferred. I think this will work, but, of course, to be sure, one should experiment with the combs afterwards or have them examined for sterility.

The picture shown with this article is of healthy brood in a comb treated with formalin vapor. When the comb was freed of bees almost every cell contained a scale. The uncapped cells in the brood area are filled with new honey. When the bees were shaken off the comb, this honey rained out and streamed over the comb surface and, in the original picture, the honey could be seen glistening. A bee at the top is sipping honey from the cells.

If you look carefully just outside the brood area, you will see some



The bees tear out the old scales and debris before using the treated combs for brood again. Often they will work right down to the midrib and rebuild the walls before they are satisfied.



A tank used at the Kansas State College for treating combs with formalin vapor. Any liquid remaining after the combs are removed may be drawn off through the faucets. The stand is high enough so a stove can be placed underneath.

scales which have not yet been removed. There was also some new pollen. This was the worst comb of the bunch.

The picture of the entire comb shows how the bees have cut away the cell walls and wax to remove the scales, old pollen, etc., which were left in the combs after treating. I have eleven colonies on vapor-treated combs and apparently all entirely healthy.

(Following the suggestions of Mr. Small and Mr. Smith, we have made a formalin-vapor tank which will hold fifty-four old-style Dadant supers, which measure 18x21 inches and are 7 inches deep. This tank is made of  $\frac{3}{4}$ -inch lumber, shiplapped and the seams filled with white lead. Two coats of battleship paint inside and one coat outside makes the tank airtight. A telescoping cover rests on a rubber edge, completing the tank.

A single-burner oil stove is used to furnish heat for vaporizing alcohol-formalin and an ordinary gallon copper tank, used with an uncapping knife, holds the solution. A well-fitted rubber pipe runs from the copper boiler into the vapor tank.

This spring we unfortunately found a small outfit of bees near one of our yards robbed out and the combs showing every evidence of disease. Later, disease was found scattered all through the hives in this one outyard. We made a cleanup, in the usual way, and sterilized the

super combs only, with formalin-vapor along the lines suggested in this article.

Formaldehyde in methyl alcohol was used. The alcohol evaporates rapidly, carrying the formalin with it; followed, I presume, by the evaporation of the remaining water and formalin, till the tank is empty.

Our greatest difficulty was in determining the correct amount of solution to use. We figured a pint to ten supers, but it may be that this is too much.

In using the formaldehyde, as mentioned above, we did not get any condensation in the wooden tank; nor did the tank seem to leak gas. If there were condensation, it would be necessary to construct an outlet of some sort so the solution, condensing and running down into the tank, would not be wasted but could be used again.—G. H. C.)

### Slow Turn-over a Drawback to Honey Sales

In the June issue of the Wyoming Beeline, E. G. Carlson, in discussing advertising and selling of honey, says the low price of honey is not due to overproduction but to lack of organization.

The question is often asked, "Why should there be such a spread in the price between the producer and the consumer when a product is sold to the retailer?"

"In the first place, honey is not a staple commodity, secondly, it is not advertised, and thirdly, and most important to the retailer, it has a slow turnover.

"The net profit in the grocery business is from one and one-half to five per cent and a successful retailer must turn his investment over at least twenty times a year and consequently his marginal profit is based on the turnover of any commodity. He must sell his quick seller with a short margin and his slow seller with a long margin. A commercial retailer has an overhead of from fifteen to twenty per cent of his selling price. This means that on a slow turnover of stock, such as honey, it is necessary that they have a long margin and until we correct this condition by advertising we cannot hope for much support from the retailer."

That is true. A very common objection on the part of the average grocer to the handling of honey is that the margin of profit is too small in view of the volume of sales that is possible to him. The average grocer is not interested in efforts to advertise any commodity, unless the turnover possibilities are such that it is profitable for him to do so. The average grocer will not spend any time giving honey a push, unless the beekeepers do the major part of the work first.

### Support Young Beekeeping Organization

The recent publicity that has been given the newly formed American Honey Institute, with Dr. H. E. Barnard in charge, may lead beekeepers to believe that this Institute is going to supersede all the present existing organizations for beekeepers.

We would urge our beekeepers to continue their active support, not only of their own county and sectional bee organizations, but of the national organizations as well, that they more effectively cooperate with the American Honey Institute in the furtherance of the publicity of honey and in allied ways.

If the American Honey Institute succeeds like its organizers hope, undoubtedly there will be a big expansion in field of effort along this line and there will necessarily need to be a bigger financial support for this institution.

The fact that the American Honey Producers League has already definitely decided to join this organization as a charter member and is appealing to beekeepers in general to give them financial support through memberships so they may properly affiliate, should be an appeal answered by all beekeepers who have the interests of honey production and honey marketing at heart.

# Peaches, Romance—and Honey

By Betty B.

**R**IPE peaches always suggest Romance to me; over-ripe, Happiness. Why? Can you picture a young lady just out of school clad in a brand-new and then entirely fashionable white duck shirt-waist and skirt affair, such as we women all reveled in about twenty years ago—a young lady, very crisp, very properly starched, most decidedly dressed up, just in for a brief vacation with an older sister? Can you also picture, across the hollyhock hedge, in a delightfully neglected jungle of rose bushes, peach trees, sweet clover and “bee gums”, a young man and a small boy intent on the manufacture of a sling-shot?

**Young Man:** There, it's done. I don't believe that fellow David could have hit any giant with a thing like this, do you?

**Small Boy:** Don't know. Try to hit the hen house.

**Young Man:** Well, we might. Give me a rock. Here, this peach will do. (Picks up an over-ripe one. Carefully adjusts it, aiming at hen house. Twirls, etc. A short pause, then vigorous and effeminate shrieks from the opposite direction and beyond the hollyhock hedge.)

**Small Boy** (with a grin): Gosh, guess you must have hit Aunt Bet. (Explanations, introductions, and wedding bells a year or so later.)

John still claims the David-Goliath Story greatly exaggerated; but I insist that either my John used the wrong kind of ammunition or he should have aimed behind instead of in front. However, I long ago forgave him this poor marksmanship, even if he did ruin my new gown.

So you see why the Peach is a sort of symbol of Romance and Happiness to me, and from our first May-flower until our last Krummel, I fairly revel in them; and surely, could there ever have been created a more lovely and more delicious fruit than a well ripened, perfect peach? Perhaps we live more simply than most families, but during summer, fresh fruits and vegetables are almost our entire diet. We have found that for perfect health and the ability to feel “peppy” and enjoy even the warmest of summer days, there is nothing like this sort of food. So many times whole-wheat bread, butter and lettuce sandwiches, and ripe peaches, sliced, served with honey and cream prove an ideal meal; though there are many other delicious ways to serve peaches with honey that one need never be at a loss for variety.

**Peach Shortcake**, made either of biscuit dough or of Honey White

Cake, is delicious, and Old-fashioned Poor Man's Pudding of stale bread, eggs and milk is quite glorified by the addition of a few sliced peaches and its honey sweetening. Minute Tapioca served with either stewed or ripe peaches sweetened with honey is most acceptable.

Have you ever tried **Fried Peaches**? If not you have a treat in store for you. Wash the peaches and cut them into halves, removing the pits. Put three tablespoons of butter in a frying-pan and lay the peaches in skin side down. Fry gently for ten minutes or longer, if they are not very ripe, then turn carefully and cook on the other side for five minutes. Dredge with one-fourth cup of honey and serve warm with cream.

**Preacher's Delight** is well named, not because it appeals exclusively to gentlemen of the Cloth, but because John's preacher-cousin invariably asks for it when he visits us each August. Peel, cut in halves and remove stones from six or more large ripe peaches. Place in a shallow bake dish, fill each cavity with one tablespoon of honey, one-half teaspoon butter, a few drops of lemon juice and a dash of cinnamon or nutmeg. Bake twenty minutes in a moderate oven and serve with cream and honey.

**Peach Paddy Pudding.** Sometimes a few sliced peaches are left over. Then our children always clamor for Peach Paddy Pudding. Cook in the usual way one cup of preferably unpolished or brown rice. When thoroughly done and quite light and fluffy, add the peaches which have been stewed, one well-beaten egg, one-fourth cup honey, one pinch of salt, one tablespoon of butter, and one-half cup of raisins. Pour all into a pyrex dish and bake for forty to sixty minutes. Serve warm or cold with cream and a little honey.

**Summer Peach Salads.** With our family we have two favorite Peach Salads, which delight our guests quite as much as they do the family. The first is made by arranging carefully sliced ripe peaches on lettuce or parsley leaves, then adding a ring of pineapple with a bit of pimento or cream cheese in its center and serving with a mayonaisse made of whipped cream, honey and a little lemon juice. The second, “Mummy's Special”, is made by paring and slicing in large rings or fancy shapes chilled nutmeg melons or cantaloupes. Arrange these melon “Fancies” on a bed of lettuce, parsley or endive leaves, alternating each with a generous slice of ripe peach, and filling the center with ripe peach.

Serve with whipped cream, honey and lemon juice mayonnaise, with a dash of paprika as ornament.

However, it is when peaches are ready for canning that the wonderful possibilities of peaches and honey come into their own. The honey blends so perfectly with the flavor of the peaches as to make them seem more like the fresh fruit. In canning peaches it is best, after scalding the fruit, while paring and pitting them, to set aside the perfect halves for your prize jars and the halves with any blemish or imperfection for the necessary juices and butters. For the Cold Pack or Pressure Canning, pack the perfect halves in the sterilized jars, being most careful that every half is placed to its best advantage, for both looks and perfect shape fitting each in as snugly as possible without crushing it in any way. Then add to each jar from one-eighth to one-half cup of liquid honey, and fill the remainder of the jar to the **Shoulder** with some juice from your crock of seconds. Arrange rubbers and lids and proceed as with other cold pack or pressure canning, being careful to get them out promptly. For the hot-water bath 16 to 20 minutes is usually recommended; and for the pressure canner 10 minutes at not over 5 pounds, depending, of course, on how quickly you can get the pressure up.

In using the “open kettle method” make a syrup of the juice from your “seconds”, using one-half cup of honey to one cup juice, (you may like it sweeter), allowing about one cup of this combined syrup to each quart jar of peaches. Bring to a boil and into it drop the perfect peach halves. Cook until tender, then slip carefully into sterilized jars, fill to overflowing with syrup, adjust rubber, cover and seal immediately. Invert to cool.

**Peach Jam.** From the seconds, delicious Peach Jam may be made. To each two pounds of peaches, three-fourths to one pound of honey, one-half cup peach juice or water, one tablespoonful lemon juice and a small cheesecloth bag containing one inch of ginger root, two teaspoons chopped-up cinnamon bark, and one teaspoon whole cloves. Cook slowly, stirring carefully until of the desired consistency, remove bag of spices and seal while hot in sterilized jars.

**Peach Preserves.** Select large ripe freestone peaches. Pare, cut into halves, and remove pits. To each pound of peaches allow one pound of honey (Some may prefer it a little less sweet). Put a layer of peaches into a large bowl or jar, then some honey, and so on until all

is used. Cover and let stand several hours or overnight. Then place them in a porcelain-lined kettle, add half a dozen peaches, and bring quickly to a boil. Simmer until peaches are tender and clear. Lift carefully, a piece at a time, and put into jars. Let cool, then when cold pour over the syrup and can.

**Honey Peach Butter.** This is delicious and very economical. During the long winters it is one of the things of which our children never seem to tire. For it the cheaper grade of peaches may be used. Scald, peel, pit, and cook in their own juice without adding water. When very soft, run through a colander. Add honey to taste, and cook very slowly, stirring frequently until very thick. A little cinnamon or lemon juice may

be added when almost done if preferred. When still hot pack into sterilized jars and seal.

In canning peaches with honey, so it is with other fruits. Pears, plums, apples, quinces, cherries, all are improved and perfectly delicious with honey as their entire sweetener. Moreover, they are far more wholesome, and why in the world do we Beekeepers-in-law want to go out and buy some other parties' product for our home cooking when in our own apiaries and at home is a far superior article, which as producers we can all afford to use and use liberally? Yes, I feel quite sure Romance and Happiness will increase for all of us if we determine to do all of our sweetening with Honey, from now on.

## Educate the Public

By Stata Kitson

**I**N sizing up the difficulty that some of our beekeepers are experiencing in the marketing of honey, I have come to the conclusion that many of them are not advertising sufficiently to create a demand for their product.

In our own province of Manitoba there was an over-supply of honey last year, and about one-tenth of the honey produced was produced on the Portage plains. Consequently, the supply was considerably over the demand, and the producer who was the best salesman stood the best chance of getting his honey sold.

Since we started keeping bees three years ago, I have been much interested in reading the various articles in the bee journals, particularly those on the use of honey for health. Like a great many others, I used to consider honey a luxury and simply a sweet like sugar. Consequently, I thought it wouldn't be a wise thing to feed much of it to my children. Therefore I seldom bought more than five pounds of honey in a single year.

Now that I have been reading the health articles in the bee journals, I have been greatly enlightened as to the actual nutritive value of honey. I know the facts must be fairly accurate or they would not be printed, even for purposes of advertisement. But as I read them, I think, "Why can't more articles like these be printed in the daily papers and in the magazines, where the great mass of the reading public can find them and make use of them?"

In our town, for instance, I find perhaps an inch or two of space is given in our little daily to some advertisement of honey, and it is just the bare notice—honey for sale at such and such a price.

I was talking with one of our doc-

tors once and remarking on the fact that the public was not yet educated to the use of honey as a food. He quite agreed with me, and remarked: "So many people use a great deal of corn syrup, an article which is just about the same price as honey, whereas, if they only knew it, corn syrup is only a filler. Honey has about fourteen times the food value of corn syrup."

Not long ago, I saw in one of our prominent dailies that, owing to the fact that liver has come to be considered a valuable food tonic, the price of liver has doubled and the demand for it greatly increased.

People want to keep well and they want to live as long as they can. If we can just convince them that an article of food will increase their well-being, they will want it. But the great mass of our population reads the dailies, and that constitutes perhaps the extent of their mental diet. Consequently, if we want to educate them to the using of honey and more honey, it is my firm belief that the only way to reach them is through the columns of the daily press.

A good many of our housewives take one good woman's magazine as an aid to housekeeping. By running a number of articles such as we find in the bee journals, in a number of that class of magazines, we could reach a great many mothers, and in this way increase our honey sales to an appreciable extent.

I have had charge of considerable of our sales for some time. I find that some women when I approach them tell me that they can't eat much honey, that a taste or two makes them sick. Well, is that the only way we can use honey? Perhaps if the only way we ate sugar was to spread it thick on bread and butter

we wouldn't eat so much sugar, either.

But we can come to depend more and more upon honey in our cooking. I have used it a lot and like it very much. Yet some may object to that. One of our local bakers bought several hundred pounds of honey one fall, but he said it made everything too rich, he couldn't make it work. The trouble was, he put in too much of it. I suppose he used the same amount he would have of sugar. In making honey brown bread, or honey muffins, or any recipe that calls for half a cup of sugar, I put in two tablespoonsful of honey, and I find that is a sufficient amount.

I made a fruit cake a short time ago, a good sized one. It was a sugarless, butterless, eggless cake. I tried it as an experiment, and for sweetening put in eight tablespoonsful of honey. A smaller one would take six.

Now we all know that Rome wasn't built in a day, and this idea of educating the public through the daily press can't be done in a day, or even a year, but the sooner someone starts it the sooner it will be accomplished. I have seen a few little articles in the dailies this past year, for I am constantly on the lookout for them. I will say, though, that if I weren't watching they would be liable to escape my notice, for some of them are so small and in so inconspicuous a place that a person would need to put on good sized specs in order to find them.

So I say again, to my mind, the remedy for this situation lies in advertising. Advertise in the dailies, not once, not twice, but all the time. I intend to write a number of articles and submit them to some of our leading women's magazines, not necessarily long ones, but fillers long enough so that the housewife cannot miss them. The beekeepers' slogan should be, "Agitate, educate, and then 'make it to eat' with honey."

## Unite the Honey "Dumpers"

Sort of in reply to the article in the American Bee Journal, page 334, "What to Do With Honey Dumpers," I suggest that all the beekeepers, or honey-dumpers as they are called, of the first and perhaps the third class in one community, unite in an organization where they turn in their surplus honey to one man of the organization. Give him a commission to handle the honey. Then when they are sold out, divide the money by percentage. In case they run out and still have a good trade, they may buy several cases at wholesale and then resell it and split the profit even among the members of the organization for the capital.

John M. Fairall,  
Iowa.



Home of J. M. Munro, Slate Valley, Ontario. Mr. Munro has kept bees continuously on this location since 1899.

## Beekeeping in Northern Ontario

By J. M. Munro

OUR experience with bees in northern Ontario has been almost entirely in the Thunder Bay District of Northern Ontario in the vicinity of Fort William and it has been continuous since 1899. We have carried on several experiments, mainly with a view to ascertaining what effect location had to do on the surplus honey production. Our apiaries were situated six miles apart. One was on light sandy land where blueberries, wild raspberries, goldenrod, and asters bloomed profusely. Very little farming of any kind is done in this area. The second was on clay loam in the centre of the farming area in Slate River Valley where mixed farming is practiced. In the neighborhood of this apiary willows, poplar, wild fruits, raspberry and clover were abundant. The third apiary was in the mountains six miles farther south where wild raspberry, clover, willow herb, and goldenrod are most plentiful. The land in this area is mainly rocky and untillable and practically no farming is carried on. The results were most interesting from the production standpoint.

The light sandy location was not to be relied upon, especially in dry seasons. From the other two locations excellent results were obtained. For several years since the experiment, the clay loam and the mountainous locations have been retained and have proved almost equally valuable over a period of years. The yield of surplus honey was well above the average for the province

and the quality was excellent. Thus we have come to the conclusion that beekeeping is a safe venture, pro-



View of Kakebeka Falls, west of Fort William, Ontario. Picture taken about a half mile below the falls. From here power is furnished for the twin cities of Fort William and Port Arthur, at the head of the Great Lakes.

vided that proper methods are adopted and suitable locations are chosen.

During the past five years the number of beekeepers has increased, especially in the clover seed growing areas of Northern Ontario. There

is still plenty of room for all who wish to make a start in the business. There are, however, many things to be considered before staking large sums on the venture. It is safe to recommend that anyone contemplating keeping bees in any of the northern districts should, first, spend a year in those districts, becoming thoroughly acquainted with the climatic and seasonal conditions before attempting to establish an apiary. Money has been made, and money will be made by the men who are keeping bees in the north, but losses have occurred and will continue to occur among the beekeepers, more especially among those who are not well acquainted with the problems involved.

Beekeepers in northern Ontario should have their bees ready to take into the cellar by the latter part of October, or as soon as possible after the last spell of fine weather in the fall. Each hive should be weighed as it is taken to the cellar, and a note made of its weight. In this way the beekeeper will know which hives are in need of more stores. Only the brood apartment with the bottom board and cover should be taken into the cellar. The hives are placed row on row on a platform raised about ten inches above the floor. Several points have to be observed to insure success in wintering. The cellar should be dry, dark, with a small amount of ventilation, and kept at a temperature ranging from forty to forty-five degrees Fahrenheit; quietness is also essential, as bees will consume more

food if disturbed than if left undisturbed. Their stores should be of good quality, and sufficient in quantity. Care should be observed that the bees are not set out to their summer stands too early in the spring. We usually set our bees out about the 10th of April, provided the weather is no colder than forty-five degrees Fahrenheit in the shade, and natural pollen sources are available.

Spring dwindling is the chief cause of the losses among the beekeepers and this trouble is due mainly to the cold north winds which are prevalent in the northern districts. Good shelter will substantially prevent these losses. If a windbreak of trees is not available it will be necessary to put up a board fence six to eight feet high at the north side of the apiary and extending in an east and west direction the full length of the apiary. In areas where there is great danger from forest fires, probably board windbreak would be the better as there would be less danger of the apiary being burned by forest fires than if it was situated near woods.

Honey and pollen sources for brood rearing are practically the same for all of the beekeeping regions of northern Ontario and provided the weather conditions are favorable for gathering they can be relied on.

The Black Alder (*Alnus incana*) is the earliest source of honey and pollen in northern Ontario. It blooms even before the snow has entirely gone. Not important as a honey producer, but provides much pollen and brood rearing is thereby stimulated.

The Willows (*Salix* sp.) are a few days later, but are a more valuable source of honey and pollen. They are first noticed about April 20th and continue in bloom until the latter part of May.

The White Poplar (*Populus tremuloides*) burst forth and continue in bloom between mid-May and the end of the month, this supply lasting for a week to ten days. The bees work on poplars in preference to the willows during this short season.

The alders, willows, and poplars are our three most important early sources of honey and pollen and all bear catkins and form a succession of bloom that is continuous from about April 15th until the latter part of May.

First on the list of sources for surplus honey production is the dandelion (*Taraxicum officinale*) which appears about five weeks after the first pollen has been gathered from the alders. It will produce surplus honey in a favorable season, the color of which is a light amber. On this account, and for the reason that the honey has a peculiar flavor of its

own, it should be removed from the supers before the main flow begins. It is the only dark honey gathered until late August. The dandelion bloom lasts from about May 20th until the first week in June.

The wild Red Raspberry (*Rubus occidentalis*) produces a honey of excellent quality which is light straw in color, mild in flavor and has a tendency to granulate with a rather coarse grain. It blooms throughout June and is well distributed.

Clovers are the most important honey producing plants in northern Ontario. There are only two varieties, however, which deserve mention as honey producers. Alsike clover (*Trifolium hybridum*) and White Dutch Clover (*Trifolium repens*) are distributed in the wild and cultivated state throughout northern Ontario. In the localities where alsike is grown for seed, beekeeping is found to be a very profitable occupation for the apiarist and a valuable accessory to the farmer in the production of good seed. The fact that an apiary is in the vicinity of an alsike field is an insurance that the crop will be pollinated. The flow from clover lasts from about June 20th to August 1st.

Great Fireweed or Willow Herb (*Epilobium angustifolium*), a tall, showy plant which produces long racemes of red-purple flowers, grows particularly in places recently burnt over and may be depended upon for several years succeeding a fire. The honey from willow herb is almost water white in color and mild in flavor. It blooms during August.

The Golden Rod (*Solidago* sp.) is the last of the main honey plants on which we depend for our surplus crop. It blooms in September and continues late into the fall. The honey is dark amber in color and has a distinctive aroma, and flavor quite pleasant and palatable.

The Asters (*Aster* sp.) cannot be relied upon on account of the frosts which occur during the blooming season. Owing to their lateness there is also difficulty in ripening the honey and this honey, if left with the bees for winter stores, will give unsatisfactory results as it invariably causes dysentery.

As a rule we find that the honey gathering season ends about September 7th and any flowers blooming after that date are not of much importance except in rare seasons.

Beekeeping has a great future in the North. Its possibilities are only limited by the extent to which attempts in the industry are made. It has stood the test of many years of severe trial, and is bringing profits to the painstaking and systematic apiarists.

## Americans Are Candy Eaters

One of our good subscribers in Burlington, Iowa, has sent us a clipping from the Burlington Gazette. This shows that the state of Nevada has the sweetest tooth as concerns the consumption of candy and consumes thirteen pounds of candy a year per capita.

States following closely are Montana, Illinois, Delaware, North Dakota, Vermont and California, all of whose population have a per capita consumption of twelve pounds annually.

It is furthermore stated that the 1926 sales of so-called "penny candies" ran to 221 million pounds. The nickel and dime candies, chocolate and peanut bars amounted to 407 million pounds.

We are, indeed, a nation of candy eaters.

If the new American Honey Institute can just get the population to cut off one or two pounds of candy and add honey, just look where we will be in another year or two. Our present consumption of honey is estimated at a little less than two pounds per capita. Boost for honey consumption and we can most certainly then boost our honey production.

## Spray Loss

Your article in the June Journal by Bishop, page 302, interests me very much as it is my work to keep alive some 20 yards for fertilizing orchards, but I cannot understand why his poisoning does not continue from the bees taking in poison from the leaves where for weeks it remains and is softened by the dew and rain. Our loss is heavy all summer from that cause. The bees seem to like it. It is possible we use here a mixture that sticks longer.

One small yard was entirely destroyed by the bees taking the poison wet up by rains where something over 50 supposedly empty 100-pound containers had been dumped in the woods nearby. They seem to like the "bootleg" stuff. When we lose a queen about June I believe that the bees gave her a drink of this.

I bought a lot of excellent combs from a yard destroyed by poison and the first swarm hived on some of them—cleaned them out very nicely and were nearly all dead by the next noon. A swarm hived on them a week later did extremely well but had some loss at first.

George W. Adams,  
Massachusetts.

# To Liquefy Honey Without Damage to the Cans

By G. G. Griswold



Removing partially granulated honey from mouth of can with a stock sprayer as described in text.

UNTIL recently we have always had some loss and difficulty in liquefying honey in sixty-pound cans. We use hot water in tanks and, of course, the bottom of the can heats first, leaving the top granulated. All at once, when the pressure is sufficient, "whoosh" the honey pours out

of the mouth of the can and several pounds are lost instantly. It will continue to overflow until the contents are all liquefied unless you are right there with a teaspoon to dip it out as it rises.

Some cans have large openings and enough honey can be removed with a spoon to stop the waste. Most of them have small openings, however, that will only admit a common teaspoon a short distance. By actual "estimate" my wife ("God bless her patience") has dipped out 3½ tons of honey with a teaspoon and your humble servant probably twice that amount (also an "estimate").

Well, things went along this way until we got to using several tons of honey, as at present. It finally came to such a pass that my better-half not only intimidated but made it quite plain that there would have to be a change in our way of stopping waste, and waiting on the liquefying 60's, or we would part company.

We searched the bee journals for a method that would prevent waste, not injure the cans and would be practical. We finally found one that we tried, just once, to our sorrow. It was simply to leave the caps of the cans on and the cans would expand to take care of the heated honey. Of course, they did, but we had to strain that honey and pack it at once. So we got the cans over the tank and carefully removed the caps, and later most of our clothes, for the honey flew in all directions. The things my wife said about the writer of this article would not do well to print, nor for her Sunday-school class to hear.



Emptying honey from sprayer. Honey is removed until can is empty enough to heat safely.

This way might be all right if there was plenty of time to let the cans stand to cool, turn off part of the honey and then reheat, strain and can, but with us time is money, so we went back to the teaspoon method, until we worked out our present plan which is cheap, takes but one minute per can, and is abso-



Left Picture shows how tube is forced to bottom of can of thoroughly granulated honey. At right, the core of honey is being forced from the tube with the wooden plunger.

lutely sure in results. We use a tube and a plunger. Simply go to your plumber, tinsmith or hardware merchant, buy a 24-inch length of straight 1¼-inch tubing of thin metal. We have a nicked tube of brass inside and nickel outside that keeps clean.

Then get a wooden plunger that is larger at one end than at the other and which fits the tube tightly, so that no honey can slip by and yet so that the plunger can readily be pushed through the tube. We cut off a hoe handle so it will fit tightly in our tube.

Now, to operate, simply place the can on the floor, start the tube through the cap hole. If you can't push it down in, don't give up but place a 1x2-inch stick across the top of the tube and push the tube clear down to the bottom of the can. Twist the tube once or twice around to break the honey film at the bottom, withdraw the tube, hold over some receptacle and start the plunger in the end, pushing the core of honey out of the tube. Repeat once more in the same can and you can heat as long and as hot as you want and there will be no more teaspoons and loss of honey while liquefying. You and your wife can do some more honey-mooning instead of teaspooning, which will be more agreeable all around.

This also works perfectly on frozen, granulated honey. You simply have to push down a little heavier, and when you take out the core, you may have to put your foot

on the top of the can to hold the can down (that is, if your foot is clean) and, in pushing out the core, you may have to have help.

Our tube is simply the curve or gooseneck cut off the end of a sink drain and cost \$2.00. The upper part of the hoe handle did not cost us anything as it was a cull.

#### For Partially Liquid Honey

Occasionally we come across a can that is partly liquefied or so much so that our tube will not withdraw a core. In that case we use the hand pump method described in "Bees and Honey", page 280, last December issue. It worked very well on liquid honey but is no good for granulated honey.

I briefly describe this, also, although we claim no credit for making it.

Buy a fifty-cent dairy fly spray gun, take off the tank, reverse both the leather and metal washer inside so it will pull instead of push. Have your tinner solder a 4 to 6-inch straight spout on the lower end that you can insert in the top of a sixty-pound can. Simply insert the spout into the honey, pull back the handle until the gun is full, or partly full, depending on how good a job the tinner does, then push it out with the cores and repeat until the honey is low enough in the can to be safe.

This cost us \$1.00 and also works to perfection, so we are freed from teaspooning honey. Harmony is restored, we have more time for honey-mooning, honey canning, honey selling and honey talking.

## The Excreta of the Honeybee

By Allen Latham

ONE of the most marked characteristics of the honeybee is her cleanliness. As one studies bees and their habits he sees a well defined connection between this cleanliness and the very existence of the insect. Living as the bee does close to its store of food, the purity and quality of which have much to do with her welfare, she cannot possess filthy habits and continue in health.

Most beekeepers in the North have seen a colony of bees in spring which, having been deprived through the severity of the weather, for months at a stretch, of an opportunity to empty their bowels, have been unable longer to restrain themselves. The combs about the cluster, the walls of the hive, the exposed portions of the frames, will be such a nasty mess that one at once wonders if that colony can possibly survive. Many do survive even though their hive has become such a filthy place, but it will be late in the season before the colony becomes of normal strength. Where one survives such

an ordeal ten probably die, gradually dwindling away until some healthy colony robs them out. Thus it has come about that the beehive is an excellent example of a well-kept dwelling, one that can teach many human beings a good lesson.

Like all animals, the honeybee has excreta. The word in this article will not have the restricted meaning which includes only such substances as are excreted, but will include the feces as well. The bee does not have kidneys, but has small tubes which perform the same function as the kidneys of higher animals. The honeybee does not have sweat glands, but does possess a system of ramifying tubes which carry off such waste products as can be rendered gaseous at the temperature of bee life. The malpighian tubes empty into the intestine of the bee and it follows that the only excreta of the bee which could dirty the hive must come from the feces.

There are two or three ideas about the bee and her feces which formerly

prevailed very largely and are today difficult to get rid of. Two of these are as follows: The normal feces of the bee are dry and hard; the bee can empty her bowel only while in flight. If one will read bee books of the nineteenth century and earlier, he will find both these beliefs upheld by serious and observing writers.

The late Arthur C. Miller amazed me somewhat several years ago by asking me if I knew that the normal feces of the bee were dry, hard pellets. I surely answered in the negative and then proceeded to prove the contrary. Miller insisted upon it and assured me that he had seen them, and, if I remember correctly, that he had seen the bees eject such dry pellets. This was only one of several "facts" about bees which Miller brought out in talks with me that I had occasion to question in my own mind. I was puzzled as to where he got hold of them, and it was not until I began to delve into old bee books that I began to find them. Miller had a very fair bee library and did a lot of reading.

Without going to the hive and watching the bee, one would reason that the normal bowel movement of the bee would be watery rather than dry and hard. I have mentioned before that malpighian tubes enter the intestine, and from this it follows that the secretions of these tubes, similar in nature to urine, become a part of the feces. Like the higher animals, the barnyard fowls, the bee has a common outlet for urine and feces. It is well known that fowls in general have very soft and often watery feces. Dry and hard feces are known as a rule only among animals having separate outlets. The beautifully shaped droppings of the rabbit are almost as dry as sawdust. Horse droppings, unless the animal is highly fed, are extremely dry.

It would seem on the face of it most unlikely that bees should have dry and hard feces. Whence sprang such a notion? If we consider a moment it is clear where the idea had its birth. If bees are confined a short time in a box there will be noted hundreds of tiny particles on the bottom of the box. These particles are dry and fairly hard and very dark in color. They will also be seen under a clustered swarm. They are mixed with wax gnawings on the floor of the wintering colony. What more natural than to think at once that these small pellets are bowel droppings? And added to this is the testimony by some observers that they have seen the bees ejecting the same.

Now it fills me with chagrin that in my forty-five years of bee study I should fail to note such a happening. I have watched bees by the hour. Surely one of the thousands

before my eyes in all those hours would be accommodating enough to drop one of those pellets for me to see. However, I shall have to confess at once that I have seen the bees drop them again and again. I have seen the pellets in formation process untold hundreds of times. Why any observer should think the pellets come from the bowel of the bee astonishes me. Yet if these pellets be analyzed doubtless the belief that they were feces would be upheld. In all probability part of their makeup is truly of fecal nature.

Try this experiment: Pour some syrup over a lot of bees and watch them for half an hour. At first they will suck up the syrup and when that is gone they will soon begin to clean themselves. Their beautifully formed legs will soon free the hairy appendages of the bees from dust particles clinging to the same and these dust particles will be rolled gradually into a small ball, one on each side. Finally these pellets reach the cleaning combs on the posterior legs and are there rubbed into one mass and pushed off to fall to the floor of the hive. Often in the process the small pellet will lodge for a moment on the tip of the abdomen of the bee.

It is highly probable that observers who have seen the bee eject these pellets caught a glance at a bee to the tip of whose abdomen there clung the small black pellet. Most of us are prone to jump to a conclusion without first exhausting the premises. Knowing all the facts just cited, I was amazed when Arthur C. Miller brought up the matter and appeared to believe that the normal feces of the bee are dry and hard. As I have never been able to find any other dry pellets on the hive bottom than these dirt dribbles and the gnawed cappings of honey, I cannot accept that it is at all likely that bees ever drop small, dry pellets as feces.

It is even more amazing that intelligent beekeepers make the statement that bees cannot void their excrement except while in flight. It is obvious that the advocates of this belief are not among the followers of the belief that I have just been discussing. The advocates of the flight-evacuation belief even go so far as to ascribe this habit of the bee as an especial provision of nature to keep the hive clean. Read page 148 of Cheshire's first volume on his "Bees and Beekeeping." You will find that Cheshire makes the statement that bees are "structurally compelled" to void their feces while in flight. In other words, Nature will not let them perform that function in the hive. Now such a statement as that, from a man of such a reputation as Cheshire had, causes one to pause a moment in wonder. I sought long for an explanation, and

I think I have found it. Cheshire was a most skilled user of the microscope. I do not hesitate, however, to assert that though skilled in the use of the microscope, Cheshire was a poor observer with the naked eyes. There are other places in his book which show such to be the case. Possibly this great beekeeper spent so much time over his microscope that his eyes were too tired all the time to see clearly what even a child could observe.

It is almost beyond imagination to think that a man could keep bees for years and not in all that time observe a bee alight on some part of his person or a nearby object and, soon after alighting, leave a generous yellow drop! Strange that his nose or ear in all that time should not have been thus anointed! How could one study the advent of a swarm, especially an afterswarm, without noting many bees resting on leaves and twigs and there relieving themselves?

If anyone will, in the forenoon of a day following a long rainy spell, stay about his apiary until the flight of the young bees starts up, he can observe the truth in this matter. Having been deprived for days back from taking the flight Nature was urging them to take, thousands of young bees leave the hives with such a load of waste matter that they can with difficulty fly. Far from being enabled by flight to rid themselves of their load, they soon alight on the leaves of trees and shrubs—also upon the family wash if it be a Monday. Here, by strenuous exertion, they rid themselves of the pasty yellow mass that has been accumulating for days past. It will emerge much in the form of a miniature earthworm and lie on the leaf in twisted curves. If one will but open such a young bee before it has taken flight from the alighting board, he will find the rectum of the insect greatly distended with a rounded mass of waste from pollen grains so thick and pasty in character that it is almost putty-like in texture. To rid herself of this mass the poor bee has to force it through an opening only about 1-32 of an inch in diameter. Many and many a poor bee is unable to bring about the necessary exertion and dies without ever becoming a field bee. This fate is especially likely when bees are fed pollen substitutes, all of which probably cause more harm than good.

It will be seen from the last paragraph that the feces of bees are sometimes very close to being dry. Such a condition seems to come only when bees are kept in by spells of rainy weather and the nurse bees continuing to consume pollen, and thus adding to the waste accumulating in their intestines, apparently lose much of the water through

evaporation, with the result that the fecal matter becomes less and less fluid. Naturally, however, the contents of the bowel remain semi-fluid and are easily ejected during flight. It is only with young bees that this condition of pasty fecal matter prevails. After the bee ceases to function as a nurse she eats much less pollen and probably never thereafter has fecal matter that is other than watery. I am inclined to believe that all bees after the nursing period is past have only very watery evacuations. If one will watch with care while bees are in flight about the hives, he will frequently see tiny drops of moisture fall, and not infrequently feel a tiny drop strike hand or face. If he puts the hand to his nose he will at once detect an odor which water alone will not give.

I am not absolutely positive that I have seen worker bees of mature age eject these watery feces while on foot, but my mind carries a mental picture to that effect. Unfortunately, the human mind finds it difficult at times to distinguish between what has actually been seen and what has been imagined. I find this to be more so as I grow older. I could now wish that I had set down in writing the thousands of various observations I have made in years past instead of trusting my mind to carry them all. Dr. Miller had a most excellent habit. No sooner did he observe a fact than he put it down in writing. He would stop all work to get that set down where it would stay until he wished it. I now carry a picture in my mind of a worker bee on the alighting board and just before her flight a small drop is shot from her body. But I do know positively that I have seen queenbees do this many, many times.

The fecal matter of the queenbee is almost the consistency of water. It is almost colorless at times, but is usually slightly yellow. I have probably handled in my life 30,000 queenbees, more or less, and a small percentage of those queens have ejected fecal matter while I had them in hand or on hand. Many times I have set a queen on my finger or thumb and let her take flight. In a great many cases, just before she spreads her wings she will evacuate her bowels. If a queen is shut alone in a cage and observed with care, one can at times observe the act. I am inclined to think that imprisoned workers do this more or less, for a cage in which they are kept will gradually become stained and yet no evidence of feces can be observed.

There are yet many mysteries in the beehive that remain unsolved. The most delightful of studies is this behavior of bees. Ever pregnant with new things to observe and new problems to solve. I will close by sug-

gesting an unsolved problem: Old queen-cells sometimes have acquired a base fully half an inch deep—in fact at times one can tear away a mass at the base of an old cup which will be as large as a walnut. This mass is waxy, sticky, smelly, gummy, and full of question marks.

Connecticut.

## Bees to India

By Richard B. Gregg

You will perhaps be interested to learn that last September I finally succeeded in getting a colony of Italian bees shipped me from England. They came out in a double-walled, well-ventilated hive, kept in the cool room where the butcher had his meat, near the ship's kitchen. I went down to Bombay and brought them directly up here, keeping deep boxes of ice beside the hive all the way up. I gave them a flight at Bombay and another on the journey up in the hills. From Simla to this place, 50 miles, they came on a coolie's head with me alongside, to be sure that he treated them kindly.

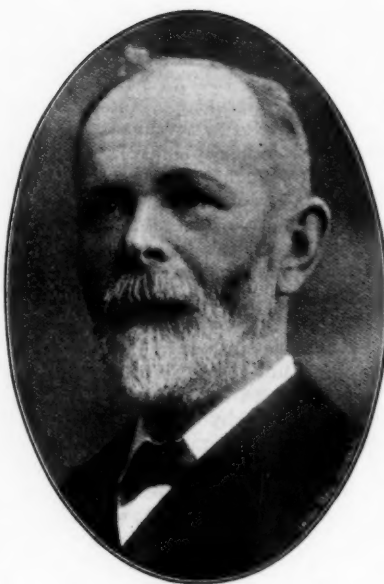
About two-thirds died somewhere between London and Kotgarh, but some bees on three combs, and the queen, survived. There was a good honey flow for them here in the autumn and I also fed them about 20 pound of sugar syrup. With a double-walled hive and other outer covering they came through the winter, and when I got back here, on March 15th, they already had sealed brood. Since then their increase has been steady and satisfactory. Later, I plan to split them into two colonies by artificial swarming, as I want to get them going in one of the villages as a demonstration.

I expect to leave here in early September and shall be returning home. But I am teaching two or three intelligent Indians what I can of modern methods and evolving a very simple honey extractor such as the village carpenters can duplicate. So I hope that the venture will carry on after I leave.

So far as I can learn, this is the first successful importation of European bees into India. One Englishman two years ago got a colony here alive, but they all died a couple of months later, due to careless handling by someone else.

## Fruit Culture and Bee Culture

The Department of Agriculture of Chile has just published an 18-page bulletin entitled "Fruticultura Y Apicultura", by T. Horzella, advising the growing of bees in orchards and explaining the utility of bees in the fructification of blossoms.



## The Passing of a Scottish Beemaster

Many of the older generation of American beekeepers will remember D. M. Macdonald, F. E. I. S., ("D. M. M., of Banff, Scotland"), who died on the 6th of May, at the age of 74, at the home of his daughter, school teacher at Grange, Banffshire.

Highlanders—his full name was Donald Macrae Macdonald—are credited with a passionate love of home, and "D. M. M." lived, worked, and died within a few miles of the place where he first saw the light. He was born at Grantown, in Morayshire, in 1853, within hearing of the turbulent water of the Spey he loved so well, and he was laid to rest near the

junction of the Tervie and the Livet, both feeders of that most rapid of Scottish rivers.

Mr. Macdonald produced only comb honey, his district was not a particularly good one, and with one exception his yield per stock was always under 100 pounds. But he produced sections of the highest grade and a large proportion of his crop was the famous heather honey of the Scottish Highlands, the most highly priced honey in the world.

At one time he had a Langstroth hive, but he was an orthodox British beekeeper to the very end, using the little English hive, with a brood-chamber 14½ inches square, 9 inches deep, as devised by Woodbury in 1861. The last time we met, at one of our "Bee Demonstrations", he took me aside and lectured me gravely because I had advocated a brood-chamber larger than this. But he did it very nicely!

Most of the great Scottish Beemasters have been deeply religious, and Macdonald was no exception. He was an "elder" in the "kirk", and a teacher in the Sunday School. He was a kindly soul, ready to help beginners, courteous and scrupulously fair in debate. Once or twice he was "up against" Dr. C. C. Miller, and each was worthy of the other. On one occasion Dr. Miller protested humorously at having "that Scotch Macdonald man let loose" upon him. "As if I hadn't enough trouble with the two Scotch people I have in the house all the time." By which he meant Mrs. C. C. Miller and Miss Emma Wilson, two sisters who are proud to belong to Scotland, though neither, I fear, was born in that land of mountain and flood.

## Psychology Versus American Foulbrood

By Jay Smith

IN the June issue, I see my friend Carr of New Jersey does not indorse my belief that A. F. B. is in the country to stay. I base my belief upon what expert entomologists have told me, that when any of the important diseases or pests once are firmly established in a country they have never been eradicated. When discovered before they get firmly established they can be and have been eradicated, although even then at great expense. A few examples: About forty years ago there were no Russian thistles in the Dakotas. The story goes that a man got some seed from Europe and that fall he noticed a large tumble-weed of a peculiar type growing in his yard. A neighbor, a Russian, identified it as a Russian thistle and told him if he did not burn it up, it would cover the state in a few years. He said he would when he got time. One morning

after a heavy gale he looked out and the weed was gone. Next spring there was a path of green showing where the weed had rolled. In a few years the country was covered with the worst weed I ever dealt with. It cannot be eradicated. If the man had burned that single weed he could have eradicated the Russian thistle. If the first corn borer had been destroyed we might have been saved millions, but it is now with us to stay and in a few years it will be wherever corn is grown. Maybe that also is a poor prophecy, but think of this again in ten years and see. Although the government has spent millions in its control, yet I have not heard a single man who has helped fight it who expects to eradicate it. The Foot and Mouth disease has several times been stamped out, for it was taken in time, but in the countries where it has become scattered it can-

not be eradicated. American Foulbrood appeared in Jamaica during the war. The government ordered all bees within three miles of the port where it was established to be destroyed and a reward was offered for all bee trees within this territory. The disease was eliminated. Theoretically we could do the same in the United States, but as it is scattered all over the entire nation, it would cost ten times as much as flood prevention. Billions of dollars would be required to do it. Therefore I say, "It can't be done."

No one, I feel certain, believes in the right mental attitude toward these things more than I do, for when we acknowledge things cannot be done, that settles it. On the other hand, it is useless to kid ourselves into believing we can do the impossible. If there had been someone to tell them "It can't be done" when they tried to build the tower of Babel to reach into Heaven it might have saved them a lot of trouble and instead of a whole lot of languages that we have now we could all sit down to our radios and understand each other. All the matter with them was that they had an overdose of "psychology". The fruit growers know they cannot eradicate the codling moth and they do not worry about it, but instead they study sensible methods of control with a result that in most years not one apple in five hundred is wormy.

I believe it will be more encouraging to all if we realize the seriousness of the disease and get better methods of control, more inspection, more appropriation and reduce it to a minimum than to entertain any fond dream of its complete eradication from the U. S. I remember a few years ago one of the big beekeepers who had made a success of bees in a large way and was an expert in handling A. F. B. made the statement that he never expected to get his yard entirely free from it. If such cases exist, how can it be gotten out of the whole U. S. when anyone can keep bees and when they get disease quit the business and allow their hives to be robbed out? When it is in trees and rocks, when honey containers are thrown out to be cleaned by the bees and spread disease as has been proven? When we import honey from countries that have disease? Well, Mr. Carr, maybe you can do it, but I am going to make the statement that it will take a heap of "Psychology".

I am not taking a pessimistic view of the matter, but rather the reverse. When we get better methods of control, the careful beekeeper will prosper, while the careless one will be put out of business. The careful orchardist considers the apple pests as blessings in disguise, for if every



### Young Texas Beekeeper

In Texas they are raising their boys to be beekeepers when they are young. Attached is photograph of one of the sons of A. M. Hunt, at Goldthwaite, Texas, who helps make up the firm of A. M. Hunt & Son. Master Hunt not only has his dad to help teach him the rudiments of the game, but a beekeeping mother as well, so that he has the foundation for future greatness in the apiarian field.

apple tree should bear fruit with little attention, apples would not bring 25 cents per bushel. The ordinary man would rather buy his apples than go to the trouble of reading up on the subject and prepare the different sprays and make seven or eight applications in a season. If he doesn't he will have little, deformed, wormy apples that will not sell at any price. So I believe as we get better control of bee diseases we may consider them our friends.

Indiana.

### Some Opinions of Bakers as to the Value of Honey

An Iowa baker writes:

"We are using some honey in our bakery and find it very helpful to get the real flavor of honey into honey foods. So far we have been very fortunate in purchasing our honey direct from the producer put up in sixty-pound containers. We believe that in the future honey will be more freely used in the manufacture of bakery products than heretofore.

"Bakery products manufactured with pure honey appear to have a better flavor and better keeping

qualities than goods manufactured from honey substitutes."

A large house-to-house baker in Washington writes:

"In reply to your letter of May 31st, regarding honey, please be advised that we have been using honey in the manufacture of our bread and have found it produces a most delicious loaf.

"However, we have been purchasing our supply from Michigan and our last order has not yet reached us, due to a misunderstanding regarding shipping instructions, and we are at this writing entirely out of honey and are not using it in our bread. However, we shall again be using it in a few days. And at that time we shall send you a sample loaf and more detailed information regarding our use of this product."

A New England baker finds two reasons for its use, but thinks the honey flavor is most important. I have in writing him suggested that an additional value in honey is its reputation for superior quality, which can be translated into advertising value. The following is a quotation from this letter:

"The reason for its use would be two-fold; namely, flavor and keeping quality. Practically, however, I believe today it simmers down largely to flavor because there are invert sugars which, I understand, accomplish about as much in moisture-retaining qualities as does honey."

An ex-President of the American Bakers' Association says:

"I am always glad to hear from you. Honey is indeed a valuable food product and a good sweetening agent, which I believe should be used more generally in baked goods. Honey can replace one-fourth to one-half of sugar used in many cakes and cooky batches. It will keep the cake or cooky moist and in better eatable condition than when all sugar is used.

"For bakers' use and convenience, it is best put up in 30- to 60-pound tins. We have purchased some honey at 8 cents a pound and have paid as high as 15 cents a pound.

"There is a certain kind of so-called Buckwheat honey that has a dark color and a strong unfavorable flavor, which must be avoided by bakers. We are not sure that the bees are to blame for this or if the beekeepers spoiled it and used the buckwheat name as an excuse.

"We have also learned that some honey on the market has been blended with, perhaps, corn syrup to reduce its cost, but pure honey is always the best to use, so the baker and confectioner can better make uniform products from it."

## Getting Good Combs Built From Foundation

C. P. Dadant

**"THIS** business of ours is a business of details." This remark was made some forty years ago, by James Heddon, author of "Success in Bee Culture." It is true. We cannot succeed in beekeeping if we do not attend to the details.

In the use of comb foundation, details are important. If you have a colony whose combs are only partly built and you decide to help them out with comb foundation, you may be astonished to see them cut holes in the outer edges of this foundation, in the part not yet needed, not yet covered by the cluster. If it is made of pure beeswax, they do not waste any of it, but use it nearer the center of the brood nest, where beeswax is needed.

My father once tried an experiment which showed us that bees can, and do, use wax from other parts of the hive, in the center of the brood nest, where there is a gap in it.

He knew that bees always build worker comb, at times when there is no honey in the field and the hives need worker bees. So, one early spring, he had me remove one comb from each of a number of hives that were fairly strong in bees and rich in sealed stored honey from the previous season. This was before fruit bloom. The combs of the colony were then spread apart and an empty

frame with starters put into the middle of the brood nest. This was, of course, before the time of comb foundation, probably about 1873 or '74. But the bees fooled us. They did not use any, or very little, of their stored honey to build up the combs, in the empty center. They built worker comb, indeed, almost exclusively, but it was all built out of dark wax, showing that they had taken bits of comb, here and there, wherever it was available and not immediately needed. It was taken mainly from the bottom of the combs, especially near the entrance and near the outer walls of the hive. They reasoned evidently that this was the only way in which they could profitably fill the gap made within their cluster.

This is exactly what they do, when we give them a lot of comb foundation, in spots which the cluster cannot cover at that time. They need to fill spots nearer the cluster and simply help themselves to such wax as appears to them unnecessary.

Any one, who has watched a swarm build its combs naturally, has noticed that the combs built are always in the shape of the cluster. They do not fill one or two frames full, but build slowly each of the combs, in a rounded shape, exactly like the ball which the swarm makes.

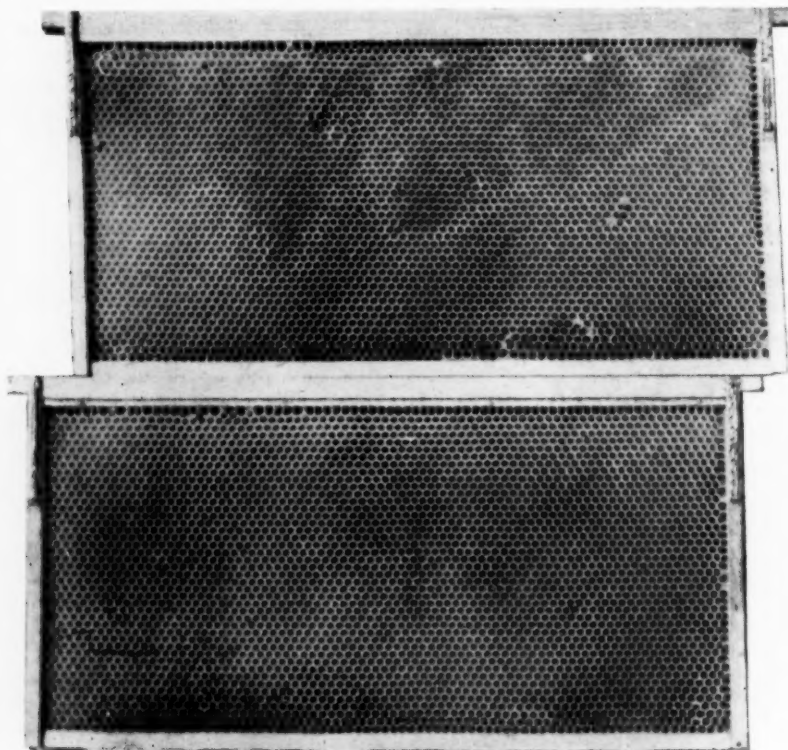
However, if the wax in the combs was not pure beeswax, it is quite probable that some of it would be thrown away. They have better judgment of the purity of the material furnished to them than we can have; they appear to know their own product. It is the same with honey. If you give them good sugar candy, made with sugar containing as much saccharine matter as the honey that they harvest in the field, they will use it to the last grain, unless it is so dry and hard that they cannot reduce it to the liquid form, but if you give them candy made of some cheap corn sugar, like the cheap candies of commerce, they will readily recognize the fraud and will show you their contempt for it.

So, if you want your bees to accept comb foundation, you should give it to them in the center of the cluster, where they can use it at once. They will then take good care of it. Another way to do is to place it above the cluster, in a spot which is kept warm by the heat of the cluster. But if you do this too early in the season, at a time when they need all the warmth that they can produce, to keep the brood at proper temperature, you will lose more than you will make. It is therefore important not to use comb foundation until it is needed or likely to be needed shortly by the bees, when they can cover it with their cluster and use it, either for breeding or for storing honey.

There is another important point to consider, in this matter of comb foundation. Since it is not "built out," the bees need to have it warm in order to lengthen the cells. They could not mould it into full sheets, even if it contained all the beeswax needed (about 6 square feet to the pound), unless its temperature could be brought by them, easily, without effort, to the temperature of the cluster, which is about blood heat. So it must be given them, if we want it properly used, just at such a time as they can use it without much effort. Spreading the combs of a growing colony, and putting in one sheet at a time, is a very good way.

So we see that, in this as in many other parts of the management of bees, Heddon was right when he said: "This business of ours is a business of details."

Let me add that, when we deprived a colony of one of its brood combs in order to compel them to build additional worker comb, we secured a very good proof of what comb costs, in honey, to the bees. If it was as some superficial observers claim, that bees can make a pound of comb out of one or two pounds of honey, the cost to them would be so little that they could easily fill all gaps. But it is not so. Comb is very expensive, and, in the spring, probably costs the



These two combs are so built as to be of great value. It is surprising to count the number of poor combs in even the best of apiaries.

The best combs are secured when drawn in supers during a honeyflow.

bees as much as Huber figured, something like 20 pounds of honey for a pound of comb. So they need to use economy in building. They save all the old lumber they can save, just like the carpenter who builds a new house out of an old one.

## Bees Cause Excitement at Ogden

R. L. Fleming, a postman, proved a hero when he handled a call received at the police station that the officers were admittedly afraid to tackle.

"Send a patrol wagon quick, a swarm of bees is about to sting everybody," a woman excitedly requested of the police chief.

None of the officers was willing to tackle the assignment and all were in quandary until the postman arrived loaded down with the morning's mail which he chucked into the safe and accepted the job.

Alone and unaided, he set out on his task. He found the entire neighborhood gathered around the place, carefully respecting a swarm of bees hanging in a cluster on a low limb of a locust tree.

Borrowing a butcher knife, he set to work and chopped off the limb to which the swarm was hanging. He quickly brushed the bees into a bucket, tied the rubber mat from the floor of his car over the bucket, first making sure he had the queen bee, and departed. He left the bees at his home and returned to the police station for his mail in just 14 minutes.

## Apple Bloom Needs Cross Pollination

Lack of pollination is one of the causes of the failure of apple trees to set fruit following a heavy bloom, and is largely responsible for the light set of some varieties in western New York this season.

Investigations carried on in that section and in Ithaca by the Cornell University experiment station, show that the problem of pollination of apple blossom in the state is becoming increasingly important. Professor MacDaniels attributes this to the shift from mixed plantings of many varieties to solid blocks of fewer varieties, and the popularity of the variety McIntosh, which almost always fails to set a full crop unless cross-pollinated. Rhode Island Greening, Cortland, and Northern Spy are in the same class, but Baldwin, Wealthy, and Oldenburg are more likely to hold their crop if poorly pollinated, and nearly always bear if the trees



## Rough Treatment

By H. F. Lefler

To illustrate the ability of the queen bee to withstand hard knocks and rough treatment, I will relate an experience that happened in one of our outyards last summer. After a severe electrical storm we had occasion to visit this yard, and, upon entering it, were surprised to see one hive completely demolished and scattered over a wide area around the original stand. This colony had been placed beneath a small tree for protection from the sun. Upon examination it was discovered that the tree had been struck by lightning, which on passing through had struck the hive. The job would have been no more complete if someone had destroyed it with an axe. The wax was badly melted and even the supporting wires were badly burned. All about were dead bees and the job of robbing had already been completed by the neighboring colonies.

We gathered up the remains and threw them into the truck, and upon arriving home placed them in the shop until a suitable opportunity to clean them up. Three days later, upon sal-

vaging the combs, I broke open two frames which had been fused together by the heat of the lightning. What a surprise I got when I discovered a very small handful of bees still faithfully guarding their queen.

How she escaped instant death I do not know, but outside of being badly starved she seemed to be in fair condition. I was going to make an attempt to save her to see if it would affect her egg-laying ability. I did keep her alive for some time, but on account of the unsettled condition of the weather at that time I was prevented from carrying out my plans. It would be interesting to know if anyone has ever carried out this experiment.

I am enclosing a picture of the hive. It was scattered worse than this, so I arranged it so as to get it all in the focus. The cap was split, which doesn't show in the picture. You can imagine there was a terrible force to tear the side out of a well-made hive and dovetailed super. Somewhere among this shapeless mass the queen was still living.

Illinois.

bloom, although the set of fruit is better when the blossoms are cross pollinated.

### Scarcity of Bees

The present scarcity of pollen carriers, especially bees, has also contributed toward the failure of fruit to set. Bumblebees have largely disappeared, cutting woodlands has deprived wild bees of a home, and fewer farmers keep bees. Bees have been practically absent from many orchards this season, even under otherwise favorable conditions, especially near Lake Ontario, where cold weather has made matters worse by keeping bees from flying.

### Cause of Failure Shown

When pollen was applied to receptive blossoms in the fruit section this season, there was an increased set of fruit. One of the grower's problems in western New York is to provide good sources of pollen, though even then he cannot be sure of getting adequate pollination if the weather is unfavorable for bees. However, there is usually at least a short time during the blooming season when insects are active and if the grower provides the orchard with good pollen varieties, the chances for proper pollen distribution are good.

N. Y. College of Agriculture.

## AMERICAN HONEY INSTITUTE

### What Pure Food Officials Say About Fraud and Deception

In replying to the letter of inquiry as to the sale of imitation honey products sent to all food officials by American Honey Institute, James W. Kellogg, Pennsylvania State Chemist, wrote:

"We have not as yet adopted any definite standard or regulation which would fix the amount of honey required to be present in such products except the position we have always taken in cases of this kind, that a sufficient amount should be present in order to give the product a characteristic honey taste or flavor.

"This is one of the problems we have in mind studying to the end that some uniform method of procedure may be adopted, but as yet we have not given it the consideration it merits. Without knowing very much about the subject at present, my first thought would be that we should not attempt to limit the use of any sweetening agent used in addition to honey, but that we, no doubt, could properly fix a minimum amount of real honey to be used.

"We are glad to have your letter before us and will keep the subject in mind as one for special study as soon as the opportunity presents itself."

Food Commissioner Mickle of Oregon wrote:

"It has always been the policy of this department, insofar as possible, to insist upon honesty in labeling food products. We feel that the public is entitled to know what they are paying their money for. If the baker advertises 'Honey Cookies', we feel that he should at least use sufficient honey to impart a definite characteristic to the product.

"I must acknowledge that we have not done very much work along the lines of bakery products and their possible use of substitutes for honey in their bakery goods. It might, as you say, be a matter for investigation, and I do feel that the honey industry is entitled to some protection."

Sarah Vance Dugan, Director of the Bureau of Foods of Kentucky, wrote:

"I feel that the use of invert sugar, in the place of honey, in the manufacture of the product to be sold under a label containing the word 'honey', is a direct violation of the food and drug act in the State of Kentucky. I am not fully enough acquainted with the facts to state whether or not a product labeled with a term containing the word

'honey' should be sweetened with no other sweetening agent than honey, though if I am not mistaken, most of the home-made products manufactured with honey do not include any other sweetening agent."

Commissioner I. L. Miller of Indiana wrote:

"Our Food Department has ruled in several cases where the word 'honey' occurred as a part of the name that the food must contain appreciable quantities of honey; in fact, sufficient honey to impart definite characteristics. Abuses in connection with the use of honey have no doubt sprung up in the baking industry. Several abuses exist in this industry which we have not been able to correct because of our limited inspection staff.

"The use of honey in food products, including bakery goods, and the proper labeling of such foods, is of sufficient importance to merit consideration. Certainly products made with invert sugar are not entitled to be called by the name 'honey'.

"To require proper labeling of this class of foods, of course, is in line with the efforts of all food control departments to eliminate adulteration and misbranding."

C. J. Kremer, Drug and Food Commissioner of Wisconsin, a man who has had years of experience in the baking industry, writes:

"I have given the matter considerable thought but have not seen my way clear to attempt interference with descriptive names used and questionable practices followed for generations. There can be no dispute but that a consumer who buys goods, presumably made with honey, should not get invert sugar products, but the baking industry seems to have utterly disregarded what the consumer may expect in choosing names for their products."

W. G. Geagley, State Analyst of Michigan, wrote:

"There has been, I believe, a growing tendency to use honey in the preparation of food products, and especially is this true since the honey interests have embarked on a program for increased production. Under controlled conditions the supply of honey in this country has improved in quality and at the same time the cost to the consumer is reduced. This unquestionably has stimulated interest in honey. Also, the knowledge of the value of honey in the diet, and indirectly bringing about a diversity of products where honey is incorporated as an ingredient, helps its sale.

"The application of regulatory features of food law enforcement, I believe, has arrived at the point where, if a claim is made for a product, the name must be indicative of what the article really is. If in the mixing or compounding of the product several different ingredients are used, it may be called by any one of them only if that one is present to the extent that it imparts a definite character to the finished article.

"The substitution of commercial invert sugar for honey is, of course, entirely out of the question. While honey itself is invert sugar, there is a decided difference between the commercial article and the natural article produced by bees. I do not think any food department could countenance the substitution of commercial invert sugar for honey in the manufacture of food products."

A. D. Sibbald, in charge of food control work in Minnesota, wrote:

"I have long entertained the opinion that when the word honey is used in any slogan or label, the product in itself should be present in substantial quantity. Insofar as our statute is concerned and insofar as any regulation of this department has been promulgated, very little thought or attention has been given the matter. It is sometimes embarrassing for a single state to take the initial step in formulating new regulations or new laws or possibly new ideas in relation to labeling, but I believe that your question is sufficiently important as to receive consideration from the different state groups, or possibly from the National Association, and certainly the Federal Food, Drug and Insecticide organization should at least give the question consideration."

Thomas I. Dalton, of the State Board of Health of Kansas, wrote:

"We have not given this phase of our work very much consideration in the past, but we believe there is much food for thought in your letter and we are going to instruct our inspectors in their work to look out for such products that might be labeled as honey products and to collect samples and have our laboratories analyze same to find out if they are misbranded, and where we find such misbranding, we intend to stop this practice."

The Institute suggests that most effective help may be given its work if beekeepers and dealers in honey everywhere write their food officials thanking them for their cooperation in protecting their industry and all lovers of honey, and offering their support to every effort to make the pure food laws one hundred percent efficient.

### Around the Circle

President H. E. Barnard, of the American Honey Institute, has re-

cently visited the state authorities of several eastern states, urging the co-operation of the food officials in putting a stop to the growing practice of using invert sugar as a honey substitute. At New Haven, Connecticut, he spent some time with Dr. W. S. Britton, State Entomologist, discussing the work of the Institute with special reference to stimulating the sale of honey at roadside stands, a growing and profitable practice for beekeepers who are located near highways much traveled by tourists and families who drive out from the cities during the long summer evenings. Much Connecticut honey is marketed in this way, and the business is growing rapidly. Another helpful outlet for honey is described by Dr. Britton as the wayside tea-room, which stimulates patronage by specializing in honey and hot biscuits, honey and waffles, and other enticing foods which are different from the standardized hot dogs and hamburger meals.

At Boston, Prof. H. C. Lythgoe showed his interest in suppressing the sale of honey substitutes and in the use of honest labels.

Dr. Charles D. Howard, State Chemist of New Hampshire, works in close cooperation with the Department of Agriculture and the Apiary Department, at the State University at Durham. A visit to the University gave Dr. Barnard an opportunity to talk with the State Entomologist both with respect to stimulating sale "by the side of the road" and in tea-rooms, and, as well, improving market conditions by the use of the government standard grades.

At the State Capitol at Augusta, Maine, Dr. Barnard found the Department of Agriculture much interested in helping the Maine beekeepers. A. M. G. Soule, in charge of food law enforcement, was generous in his offer of help in stopping every fraudulent sale of honey and in developing a larger demand for honey among the thousands of summer residents of that vacation state. Both the Commissioner of Agriculture and Mr. Soule appreciate the fact that if the hundred thousand families who make Maine their summer home acquire a taste for Maine honey they will continue to use it when they return to every part of the Union after their holidays.

At Baltimore, Maryland, Food Commissioner A. L. Sullivan promised the hearty cooperation of his inspectors and chemists in protecting the producers and bottlers of pure, honestly labelled honey. And at the State Capitol at Harrisburg, Pennsylvania, Dr. James W. Kellogg was equally generous in his offer of assistance. Commissioner Kellogg has recently solved a problem similar to that of honey bread, cake, buns, bars and

fudge, in the case of so-called butter pretzels made without butter. He naturally, though not without opposition, ruled that butter pretzels must be made with butter. His position with respect to so-called honey goods will be the same.

The Institute believes that it can give honey producers much help in stimulating the sale of pure honey through the cooperation of the food departments of all the states, and as he has an opportunity, Dr. Barnard plans to visit them on behalf of pure honey and good honey products and more of them.

#### Honey in the Arts

Bakers know the value of honey. They have always used it in their products. For thousands of years it gave them the only sweetening for their cakes and pastries. When yeast leavened breads took the place of hard cakes bakers used honey to feed the growing yeast plants both because they found it a most desirable food and because the honey flavor and fragrance made their otherwise mild-tasting breads appetizing and desirable.

When, only a few decades ago, beet sugars and cane sugars became cheap and abundant, honey dropped out of cooking and baking formulas. It was too good. It entered the luxury class. But bakers remember its fragrance and recognize the appetite appeal of the word honey. So for sentimental reasons they make honey bread and buns and cake. And confectioners are proud of their honey bars, honey creams and honey fudge. So definite is the value of honey in food and candy formulas, both because of its technical worth as a sweetening agent and because the very word means something delicious, that it is used in large quantities in bakeries and in confectionery shops.

There is, however, a competitor for every good thing, and this is quite as true in foods as in textiles, or building materials. In the bakery the competitor of honey for a place in cake formulas is invert sugar, a sugar made from ordinary sugar by treatment with acids. Invert sugar is satisfactory sugar, but it has no honey flavor or fragrance. It is just invert sugar. Some bakers use it because they are told that honey is mostly invert sugar and so they go on producing honey breads and other honey products, without the help of the honeybee. This is illegal—as great a fraud as selling brown sugar for maple, cottonseed oil for olive oil, grain vinegar as cider vinegar. The consumer who is tempted to buy cakes, cookies or candies by a false honey label is defrauded.

In an effort to secure protection for beekeepers and honey dealers

against the serious competition of artificial honey sold under false and misleading labels, American Honey Institute sent out a letter to the heads of all the State Departments charged with enforcing the Pure Food laws. The letter read as follows:

"The first sweetening agent used by bakers undoubtedly was honey. It is still used, and its presence is indicated in such brand and trade names as Honey Cookies, Honey Jumbles, Honey Crust Bread, Honey Loaf, Ma-Honey Bread, etc. When honey is used in the formula in sufficient amount to give a definite character to the product the use of these names is of course fully justified. But there must be some limit to the quantity. Should that limit be the use of no other sweetening agent than honey, or the use of a sufficient amount to impart definite characteristics?

"Invert sugar imparts characteristics similar in some respects to honey and I have known of cases where baked products made with invert sugar bore a honey label. Has your department, in its study of bakers' formulas and brands, given any consideration to this interesting and in many ways important violation of the Food and Drug Act? Is it, do you think, a subject which may properly be investigated, in the thought that the consumer who buys goods presumably made with honey should not get invert sugar products, and as well in the effort to protect the honey industry from deceptive practices which may seriously curtail the use of the genuine product?

"I shall be glad to have your thought on these interesting matters."

The response of the food chemists and officials to this letter showed a complete appreciation of the seriousness of the competition of fraudulent honey on the part of the Pure Food Departments both as it limited the sale and lowered the market value of pure honey, and as it deceived the purchaser into buying something he wanted but did not get.

The Institute believes that the aroused interest of the men who are enforcing the pure food laws will put a stop to fraudulent practices and assure the purchaser who buys honey-made goods of his ability to get what he wants.

#### Apologies to Dr. Merrill

Dr. Merrill, of Raynham, Mass., is author of "What to Do With Honey Dumpers," on page 334 of the July number. We left his name out. Perhaps saved him a few pot shots, unintentionally. John Fairall, on another page of this issue, gives a good way to clear up the annual "wash days".

# THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

## HONEY HOUSE PLANS

I wish to consult you in regard to plans for a central extracting honey house. I hope to build one soon and here are some of the problems I have to solve. It will be difficult to get a side-hill site and I wish to avoid the use of a honey-pump. How can this be done best on level ground? Would a hoist be advisable? I do not think honey should be stored in a basement on account of dampness. I should like to arrange to store honey in the comb, not extract it as it is taken from the bees. This would probably have to be done on the ground floor on account of weight. I should like to make the building as warm as possible for winter work.

Any help you can give me, or any suggestions on any detail whatever, either through your journal or by letter, will be greatly appreciated. Perhaps you could see fit to have an article in your journal on honey house plans. If you have any books on the subject or know where I can get help, will you kindly let me know?

CANADA.

Answer.—We have several times inserted letters giving descriptions of honey houses. But it is difficult to give any instructions that will serve the majority, because there are so many different conditions to consider. One of them is, how many colonies do you keep or expect to keep? This question you did not mention yourself. Another question is whether you expect to keep your stock of empty hives in the building, also whether you expect to put up extracted honey in jars and pails. In that case, you must have convenient room to do the work and to store the honey.

Some people want to have a bee cellar under the honey house, and that is another consideration.

In your case, I would recommend an approach on one side of the building, either of lumber or dirt, so that you may be able to drive up to the second floor and store your honey there, before extracting. The first floor does not need to be a very high story, if you expect to use it for a storage room after extracting and also for honey in sections.

If it is difficult to make an approach to drive up to the second floor, you might get a low price elevator to raise your honey to be extracted. I am like you, opposed to the honey pump. But I like to extract the honey as soon as it is taken from the hives, because, otherwise, it has to be heated to have it warm enough to extract. I have seen extracting rooms where they heated the honey for extracting and I did not like them.

As to the size of the house, you should be able to figure that out according to what you wish to do with it. If you are to store your empty hives and supers and your honey in it, you will need a large building.

You can make it warm by making double walls, with either plaster between the stud-dings or some non-conducting material like shavings or sawdust in the walls. Be sure and fix your windows so that they will have a bee escape on each. Be sure to have a good stone or concrete foundation, so that neither rats nor mice may burrow in it. A mouse or two can make a lot of trouble in a stack of extracting combs during the winter.

## SMALL QUEEN DIFFICULT TO SEE

I have a very queer case with one of my colonies of bees. Something I never heard of before. I have had bees for over fifty-five years. I have read all the old bee books back in the seventies, Langstroth, Quinby, Kidder and Metcalf's "Key to Bee-keeping" published in 1863. Also have taken both bee journals, "Gleanings" since 1873, and "American Bee Journal" since 1874, when it was published in Chicago by Thomas Newman. With all my reading and experience I have never seen anything like this case.

This spring I noticed one of my colonies came out very weak. On examination I found a small patch of brood in two frames about the 15th of April. There seemed to be some chilled brood. There was hardly a quart of bees. I failed to find any queen. Thinking I would run the first swarm into this colony, I closed the entrance to a one-inch opening and packed them well on top to hold the temperature. They had a surplus of honey. In a few weeks I examined them again and found they had cleaned out the chilled brood and seemed to have a little more brood than when I first examined them. They hadn't gained any in strength as I could see. The brood ranged from all stages from the egg to the hatching bee. The young bees looked healthy and very light color. I still failed to find any queen.

So I have come to the conclusion that it is a fertile worker laying workers. As I have had many fertile workers they have always laid drones, but there are no drone cells or drones in this colony. As I have examined them three times, it would be impossible for me to overlook a queen on account of their being so weak. Now if any of the readers of the American Bee Journal have had this experience I would be glad to hear of it.

White clover and alsike are in full bloom, and the strong colonies are whipping out the drones. Looks bad for a honey crop at this date.

INDIANA.

Answer.—Without any doubt the insect that is laying eggs in your hive is a small queen, as it is out of the question for any laying-workers to lay anything but drone eggs. Worker bees are not capable of mating and therefore cannot lay any fertilized eggs. If any bee can mate with a drone, that bee has the organs of a queen, although she may be nearly as small as a worker.

I would suggest that you insert that colony in an observing hive. You will then be able to detect the bee that lays the eggs and if it is a queen she may be interesting to examine.

## SWARM BALLING QUEEN

On July 11 one of my colonies swarmed. By the time I got out to where they had alighted, the bees were returning to the parent hive. I started looking around for the queen and found her on the alighting board just about dead. On July 19th the same thing happened again, they swarmed and returned to their hive, and I found the queen on the alighting board, with a number of bees around her; it looked to me as though she had been balled by the bees. The queen died shortly after I found her. The colony is very strong and they have done very well this year.

Please advise me what is the cause of this, and what is the best thing to do with this colony?

MICHIGAN.

Answer.—It often happens that when a queen is old she becomes unable or unwilling to fly with the swarm. If a young queen has hatched out, she may go with the swarm. But if the old queen is the only one in the hive, the swarm must return, for

it cannot leave without a queen. After two or more trials the bees often get angry with the old queen and ball her. They sometimes kill her. This happened to us years ago, when Moses Quinby invented what he called "a queen yard", a sort of enclosure from which the queen could not escape, if her wings were clipped, so that she neither could fly nor get lost in the grass, as often happens when they are clipped. At the second or third trial, the bees got tired of the queen and balled her till she died. This proved the queen yard of no value although Quinby seemed to have a great deal of faith in it.

In an occurrence like this, we would gather the swarm, by moving the hive away and give this swarm a new queen or some of the combs containing queen cells. An old queen of this kind is worthless and had better be done away with.

## HOW TO ADD SUPERS

Will you please give the best method of adding supers to a hive? Do bee experts place the empty added super on top of filled super, or do they put it down next the brood chamber and put the filled super on top, where the supers are left with the colony until later in season?

It seems to me that if each newly added super is placed below, there is an enormous amount of lifting and placing. And if set on top, a whole lot of climbing and scrambling, muddled-up cases, etc.

ILLINOIS.

Answer.—Different beekeepers follow different methods. Our way is to put the new case under the full one, if the latter is quite full. But if it is only partly full we think it is as well to put the new case on top of the tier.

As you say, there are difficulties both ways. But all things considered, we prefer to do a little more lifting and give the bees more comfortable conditions. There is also a difference between the producing of comb honey and that of extracted honey, as it does not much matter whether the combs are very full in extracted honey, but it is quite important that they should be well filled and thoroughly sealed in comb honey production.

## COMB BUILDING

1. Will bees gather honey when nectar is available if sugar syrup is kept in the hive?

2. Will they build comb when placed in the hive with one comb containing brood, and some honey with the remaining combs filled with full sheets of foundation?

3. Is there any way to get bees to build combs this time of the year? They are black bees I bought and put in the hive about August 1st.

KANSAS.

Answer.—1. Bees prefer honey to sugar syrup and will abandon the latter when there is nectar in the flowers. No one wants to give bees sugar syrup when they can get nectar in the fields.

2. Bees will not build comb when there is no honey coming in, unless there is a vacant space in the middle of the brood combs. Then they will make great efforts to fill the vacant space. They will, of course, lengthen out the comb foundation next to the brood and often, if they have a number of sheets of foundation that they cannot use at once, they may cut some wax from the farther sheets to use in those nearest the brood.

3. Yes, you can get the bees to build comb at this time of the year, provided they are supplied with plenty of food. In the best circumstances, it takes about 7 to 10 pounds of honey or syrup to build one pound of comb. In unfavorable circumstances, it takes as much as 20 pounds of syrup or honey to produce one pound of

comb. It is very much like the production of fat or of butter in cattle. They will produce a greater amount when circumstances are favorable to its production.

#### STARTING BEES IN DAKOTA

1. Can you tell me of a good location in Dakota for beekeeping?

2. What kind of hives would you advise?

3. Will it pay to buy lumber and make the hives myself, or is it cheaper to buy hives from a factory?

ILLINOIS.

Answer.—1. Judging by reports, almost any locality in the Dakotas is good for bees. But it is better for you to take a trip into those two states and find out for yourself where there are unoccupied locations, where there are good schools, etc. If we tried to tell you all this, we would fail. See for yourself.

2. Of course, since we have adopted a hive and have used it for more than 50 years, we would recommend that. But other hives are also good. The Langstroth in two stories for brood is a good hive. Some other styles are good. None of them are perfect.

3. Whether it will pay you to make your own hives depends upon several things, whether you are an accurate carpenter, whether you have circular saws handy, whether you have leisure or your time is profitably occupied. Without circular saws it is a poor plan to make frames yourself, for they must be built accurately and, in fact, it is important that all the parts of the hive be made so as to fit any other hive. Otherwise you will lose more than you will make by economizing on the manufacture.

#### TO STERILIZE TOOLS AND HANDS

What is considered a safe wash for hands, hive tool, smoker bellows etc., when going from one hive to another in case of A. F. B.?

IOWA.

Answer.—Strong soap suds is sufficient to wash hands and this is hardly necessary if no brood has been touched by the fingers. Metal tools may be cleansed at the same time as the infected hive, after it has been emptied of its bees and combs, by using the flame of a gasoline torch over the surface. A slight touch of the flame is sufficient. The authorities agree in stating that there is little danger of the spores, except on the combs or in the honey. The greatest danger is from robber bees which may invade the hive while its combs have been examined. For that reason we recommend handling the infected hives only during a honey crop or late in the evening. Bees going from the infested hive into neighboring hives are also a danger. If the infection is general in an apiary, it is best to transfer every colony as if all had the disease.

#### UNITING QUEENLESS BEES TO WEAK COLONIES

Will you kindly give me detailed advice on the best method of uniting queenless package bees to weak colonies of bees? I have some weak stands that I wish to improve in this manner.

I tried the newspaper method last fall but it failed completely, so do not wish for more failures.

IOWA.

Answer.—The newspaper method is very good for uniting colonies, but you must remember that your bees must be supplied with food, in order to prevent their fighting. It is quite probable that, if you had fed the bees to be united, previous to uniting, you would have had no trouble. If you do the uniting during a honey crop, as at present, you will have little if any difficulty.

You should unite the queenless colony

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with the queen-right colony and not the other way, for queenless bees will be more likely to stay where they are put, if they find a queen, than would otherwise be the case. Of course if the bees you wish to unite are packages just received you have no choice but to unite them with the weak colonies, feeding both previously.

### REQUEENING BY GIVING BROOD

My friend tells me that if a swarm of bees are without a queen and I give them a frame of brood, even though it does not contain a queen-cell, they will raise a queen. Is this true?

Answer.—Yes, sir, if your swarm contains bees of different ages and they are given a comb of brood with eggs, and larvae less than 3 days old, they will build queen-cells around a certain number of female larvae and will hatch at least one queen. This is due to the fact that every egg laid in a worker-cell may be reared as a queen if it is fed properly by the bees and placed in a queen-cell. You will find that statement in all the textbooks.

### VAPORIZING ALCOHOL-FORMALIN

After reading Jay Smith's article on treating foulbrood combs I wondered if Hutzelman's solution would work in place of the formalin.

I have some of the Hutzelman's solution which I have never used. What is your opinion on this question?

I thank you for any information you can give me.

MONTANA.

Answer.—As to whether or not the Hutzelman solution would work the same as was recommended for Formaldehyde in sterilizing American Foulbrood combs, I don't know. If a good large quantity was used and left in quite a long time, I should think the formaldehyde in the Hutzelman solution would destroy the germs. I would not recommend that you leave it a shorter period than a month, and two or three months would be better. It would be an experiment and you might try it in a small way and see how it would work.

### ROBBING AFTER HONEYFLOW

I only have a few stands of bees and have never had a lot of success in getting much honey, and right now I am wondering if you could tell me why my bees seem to be getting robbed; anyway, they are continually fighting and carrying live bees away from the hives. There is only one or two that are not doing this and one of these is an old stand and has never put more than six pounds of honey in the super.

INDIANA.

Answer.—From the short description you give, I cannot guess what is the matter with your bees. They should have made some honey from the 15th of June up to this time, anyhow, since your letter is dated July 15th. It may be that some of them are queenless and that the other colonies have been in the habit of robbing them. You should examine your hives inside and find out whether they have brood. Those that have no brood should be united with others or, if strong enough, should be given a queen.

### CHANGING FROM 10-FRAME TO LARGE HIVE

I am thinking of changing from eight and ten-frame hives to the large Jumbo hives for extracted honey production. Would you advise doing so in this section, which is the Black Belt or prairie section of Alabama? I only have twelve hives now, but may increase later and would like to know what is the best equipment to use before doing so.

ALABAMA.

Answer.—We would certainly recommend changing from the Langstroth hive to the deeper hive, but we prefer a hive with

greater spacing than the Jumbo. The Jumbo was built as a Modified Dadant hive, the only difference being that the Modified Dadant has frames spaced 1½ inches from center to center, while the Jumbo has them spaced, like the regular Langstroth, 1 inch from center to center. The difference is not great, but it constitutes quite an improvement, since it gives about 150 cubic inches additional for ventilation in summer. That is why there is more swarming with the Jumbo than with the Modified Dadant hive.

## Proposed Change In Honey Grades

An effort to change the present grades under which extracted honey is sold is being made by a group of Western honey buyers, according to a statement by Professor Phillips of the agriculture department of the State College of Agriculture at Cornell University.

Professor Phillips points out that if the present limits are altered along the lines suggested, the majority of honey produced in New York state will be disqualified from the better grades. Under the present system, most New York honey is sold as "white", but under the new system, a great deal of this honey would come under a new "light golden" grade which it is proposed to establish.

The buyers who wish to change the limits claim that this would bring the grading system more in accordance with trade usage. Numbers of New York beekeepers have written letters requesting that the present grades be retained until such time as they are shown to be unfit for trade usage.

## Spray Poison a Very Real Thing

Perhaps you think I bear down too heavily on damage by spray poison, but I assure you it is a condition, not a theory.

The paste on the leaves from the spray remains there and softens up by rain and dew and is eagerly taken by the bees. Any beekeeper should be broad-minded enough to admit that it is absolutely necessary to use this spray and then keep his bees up as best he can with the cooperation of the fruitmen.

Of course, those who go around with spray outfits working the small orchards in bloom should be stopped.

I find the dust rather worse than the spray and have seen thirteen colonies practically wiped out at one dusting. An astonishing amount of the dust is brought into the hives and I have taken a cup full of this mixed with wax scales which the sick bees cast out of their wax pockets. One wonders if they do this in an effort to relieve pain.

George W. Adams,  
Massachusetts.

## A Local Village Industry

Mr. Harry Seamark carries on at Willingham the ancient industry of making straw hives for beekeepers. His father and grandfather before him carried on the same trade, and Mr. Seamark was cradled among the bees. He not only makes the old-fashioned skeps, but keeps a large number of bees in the modern wooden hives, and there are few things about bees and their management with which he is not familiar. It is remarkable that there is still a large demand for the straw skep. Willingham hives go all over the world, even to U. S. A., although for the better control of bee diseases there is in that country a law which prohibits beekeepers from keeping bees except in hives with movable frames. (The law in question does not exist in every state.—Editor.)

This year Mr. Seamark has accepted the post of expert to the local association, and on Saturday in the Botanic Garden he gave a most interesting demonstration of his craft before a large and fascinated audience.

The skep is a coiled basket with a core of straw, sewn with a weaver of osier or cane, open at the bottom, and either dome shaped and closed completely at the top or made with a flat top and a hole in the center to give access to an upper story. The tools used in making it are simple and home-made: a boxwood cleaver to split the osier rods, a shave to pare down the strips, a ring of cow's horn to keep the coil even, and a "needle" made from the blade of a fenman's patten (anglice skate), complete the outfit. Mr. Seamark sits down to his work, and it is wonderful how quickly his stubborn material grows into shape and yields to his apt manipulation.—Cambridge Chronicle, May 23, 1928.

C. F. Clay, Cambridge, Eng.

## Bees Fertilize Blossoms

In the June 26th issue of the "Arizona Cattleman and Farmer", is an article entitled "Bees Boost Fruit Crop in Orchards." It tells of a farmer and fruit grower in Michigan, who disbelieved the above stated fact, saying that he had never noticed bees in his orchard. Finally he erected an 18-foot cage covered with muslin, around one of his apple trees, to protect the bloom against insects. The result was decisive. Just eight apples "set" upon the tree in question, while other trees of equal size gave 12 to 15 bushels of apples per tree.

This result does not astonish us. We have seen it tried before, with similar results. Bees are useful to fertilize blossoms, not only of the apple tree but of nearly all kinds of fruit.

for August, 1928

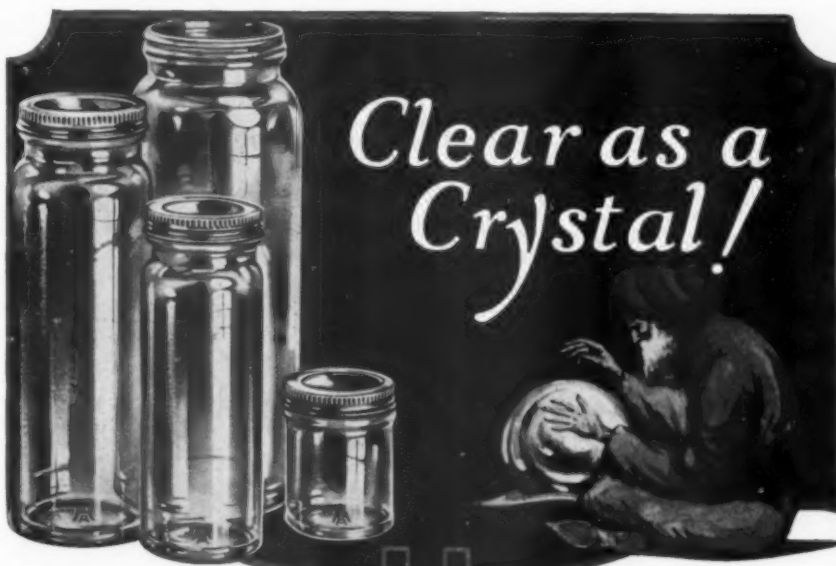
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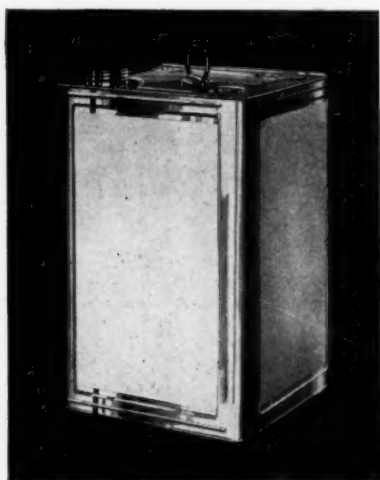
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We are also in position to furnish all sizes of friction top honey and syrup cans. Let us quote prices on your requirements.

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## Meetings and Events

### International Congress of Entomology

The Fourth International Congress of Entomology will be held at Cornell University the week beginning August 12th. Entomologists from all parts of the world have already signified their intention of being present and this will doubtless be the largest entomological congress ever held.

For the first time in these congresses, Apiculture will have a place. A program is arranged for sessions especially devoted to this field, and they, like all the special sessions, will be held in the afternoons. The morning sessions will be of general interest to all persons attending the Congress. On Wednesday the entire Congress will adjourn to the Agricultural Experiment Station at Geneva, forty miles from Ithaca, where demonstrations will be given of all the methods of insect control, including airplane dusting.

In addition to the regular features of interest to those engaged in work in apiculture, there will be some interesting features immediately following the close of the Congress. On August 20th, the Empire State Federation of Beekeepers' Societies and the Finger Lakes Beekeepers' Association will hold a combined picnic and annual meeting at the home and apiary of Mr. E. L. Lane, Trumansburg, twelve miles from Ithaca. Trumansburg is on Route 15 between Ithaca and Geneva. On August 21st an automobile trip will be made to visit important apiaries within reach of Ithaca and on the way to the western part of the state. On August 22nd the Western New York Honey Producers' Association will hold its annual summer meeting and picnic. It is hoped that all persons attending the Congress who are interested in beekeeping will remain for these three days the following week. A fee of \$5.00 will be charged those attending the Congress, for which each member will receive the printed proceedings containing all papers read in all sections at the Congress.

### Over a Hundred Present at Lisbon Meeting

Over one hundred beekeepers were present at the recent meeting at Lisbon, North Dakota, with visitors from Minnesota and South Dakota. Kiwanis and advertising clubs of Lisbon provided luncheon at Sandager Park, on the Sheyenne river. The morning session was held in Ransom County court house.

In President W. W. Remington's report, he called attention to the fact that there is about a half million acres of sweet clover in North Dakota, which is increasing about ten

per cent each year. The problems of marketing, transportation and warehousing are becoming more acute, because the beekeepers are producing larger quantities of honey.

E. P. Fisher, Secretary of the Northern Cold Storage Warehouse Company, stressed the importance of using only the best system of grading and packing. He showed the great advantage of beekeepers making use of the water route, shipping from Duluth by way of the Great Lakes, as compared with shipping by rail.

In his talk on the disease situation in the State, State Apiarist J. A. Munro outlined control measures for the disease, describing the latest methods of treating. He did not recommend any measures except those which have been tried and proven successful.

The afternoon session was held at the apiary of S. T. Leach & Son at the edge of the city. Prof. J. W. Thompson, of the University of Minnesota, gave a comb honey demonstration, and Mr. Sam Lawrence gave some interesting advice on extracted honey production, especially the importance of having good stock.

### Ohio Field Meet

The Lorain County Beekeepers' Association and the Business Men's Club of Amherst will act as hosts to Ohio beekeepers, August 8, 9 and 10. All visitors should register with the Amherst Business Men's Association on the afternoon of August 8th, in time to get located and attend the big campfire to be held that evening at Beaver Park, a fine bathing beach on Lake Erie, three miles from Amherst.

The general program will be given on Thursday, August 9th, with a picnic luncheon, and an evening banquet. On Friday, trips will be made to various apiaries and to other points of interest in the county.

All persons interested in beekeeping are invited to attend, and the Lorain County folks are planning to make this one of the most enjoyable and profitable meetings ever held in the State.

### Empire State Federation Meeting

The Empire State Federation of Beekeepers Associations will hold its annual meeting and picnic on August 20, 1928, at the home and bee yard of Mr. Lane of Trumansburg, New York. Trumansburg is located on the main State Road between Geneva and Ithaca known as Route 15. Signs will be put up in the middle of the town to show how to reach Mr. Lane's place.

Dr. E. F. Phillips is in charge of the speakers so a fine program is

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**50c EACH, Any Number**

Requeening time is now on. Our Queens meet your needs. Vigorous, beautiful and gentle. Disease resisting and hardy enough for the Northern climate.

During the Summer and Fall months we expect to ship 5000 Untested Queens. With this capacity, priced as we are offering them our Queens will head many colonies that make a fine crop of honey for 1929. Your patronage solicited. We guarantee to please you perfectly or refund your money.

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HAMILTON, ILL.

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Reared second door from the postoffice. Save three days' confinement by R. F. D. and hot mail sacks from southern route. Queens selected, guaranteed to be purely mated. April and May, \$1.25 each, \$13.00 for twelve. After June 1, \$1.00 each; 24 at 95c, 50 at 90c, 100 at 85c each. Select tested, \$2.00. Breeders, \$5.00 up; virgins, 50c. See list. No disease. Safe delivery and satisfaction guaranteed.

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Beekeepers in many lands have been pleased with this most important tool in Beekeeping. Your Bingham Smoker is offered for sale by numerous dealers.

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Denver, Colo.

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Untested, 70c each, \$8.00 per doz., \$70 per 100  
Select tested \$1.00 each, \$11 per doz., \$89 per 100  
Tested Queens \$1.25 each.

Satisfaction and safe arrival guaranteed.

**Middle Tennessee Apiaries**  
LEO C. PARKS, Mgr. SPRING HILL, TENN.

## GOLDEN QUEENS

Yes, and the best that are offered. Not one complaint from my many customers living in 33 states, but 100 per cent increase in business with them this year.

Single queens, \$1.00; two to nine, 80c each; ten to twenty-four, 75c; twenty-five and over, 70c each  
Tested queens, \$1.50 each

**M. STEVENSON, Westwego, La.**

## RED STICK

PURE ITALIAN

## QUEENS

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Time has told — that legend old:

"When queens and bees are better than these  
RED STICKS will lead in bettering the breed."

We mean this more and more each year.

With our low price and the heavy producing record of our queens, everyone can queen each colony every year. This means more honey and safe wintering.

We will operate more than 1,000 standard three-frame mating nuclei for the balance of this season.

Clipped free on request. State health certificate sent with each order. 100% satisfaction and pure matings guaranteed. Last year our pure matings were better than 98%. Get our circular and learn why our queens hold the front rank.

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Untested queens-----\$1.00 each  
Tested queens-----\$1.50 each  
Bees-----\$1.50 per lb.  
Nucleus-----\$1.50 per frame

Bees inspected; free from disease

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## IOWA QUEENS

You need good Italian Queens, and that is the kind we raise.

We guarantee pure mating, safe arrival and that you will like the queens.

Untested queens, \$1.00  
Select untested, 1.30  
Tested, 1.60

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assured. The Finger Lakes Beekeepers Association is fostering this meeting and will be a joint affair, so every beekeeper in the state should make an effort to be on hand for this big meeting.

On August 22nd, the Western New York Beekeepers Association will hold its annual picnic at the home of J. H. Sprout on the Lockport-Akron Road, Lockport, New York. The intervening day between these two picnics, Dr. Phillips will take some of our guests, and anybody who wishes to go along, to see some of the principal beekeepers between Trumansburg and Lockport.

On August 25th, the Chautauqua County Honey Producers Association will hold its picnic at the home and apiary of Ernest Gleason, Cassadaga, New York.

F. M. Babcock,  
Secretary, State Federation.

### Annual Wood County (Wisconsin) Bee Tour

The first Wood County Bee Tour was held June 17th, along the main highways of the county. There was a fair attendance, considering the weather, as it rained all day and the side roads were slippery where the farmers were to join the tour.

We were fortunate in having Mr. James Gwin and wife with us. Mr. Gwin is our State Marketing Agent and a great worker who will put beekeeping in Wisconsin on a profitable foundation. Charlie Pritchard.

### Meeting of Central New York Beekeepers' Association

The annual meeting of the Central New York Beekeepers' Association will be held at the apiary of Dr. Charles G. Schamu, Liverpool, New York, on Friday, August 3rd. The main feature of the meeting will be the infection of two colonies of Dr. Schamu's with American foulbrood. Dr. Schamu will endeavor to clean this up by the use of his bottom board, thus controlling the drone bees and breeding an improved strain of bees in which foulbrood cannot exist.

All beekeepers welcome.

J. H. Cunningham, Sec'y.

### Appointment to Southern Field Station

W. W. Whitcomb, a graduate student under Prof. H. F. Wilson of the University of Wisconsin, has been employed by the Federal Bee Culture Laboratory at Washington, to take charge of the Southern Field Station, to be established shortly at Baton Rouge, Louisiana.

## Foreign Notes

The "Gazette Apicole", in its June number, publishes a statement concerning a recommendation from the Ministry of Agriculture of France, for the destruction of the "cherry fly" (*Rhagoletis cerasi*) which is proving destructive to cherries. They recommend poison-traps which they call "cabanettes", used in Italy successfully for the *Dacus* of olives.

As this trap, which is to be used on the trees, will catch and poison bees as well as cherry flies, the editor of the Gazette Apicole urges the use of wirecloth cages with meshes not exceeding 4 millimeters in which to enclose the trap, as the cherry fly is small and can enter such cages while the honeybee will be kept out.

## Queens Sent by Air Mail

Bee royalty has taken to riding the air mail. Twenty-five queens were passengers on the Boeing air mail plane from Medina, Ohio, to Bakersfield, Calif., here July 12th. They left at 5:10 p. m. July 11th, arrived in Salt Lake at 9:00 a. m. July 12th, and expected to be at their destination before dark. Some fast flying for bees! Their passage cost \$10.40.

According to officials of the company, this is the first time bees have ever been carried through the air. Their travels were as direct and swifter than the reported flight of a homing bee.

## Sweet Clover for Honey Alone

Mr. N. E. Miller, of Utah and California and elsewhere, one of the big and progressive beemen, is plowing up fifteen hundred acres of land which he will sow to sweet clover for the honey it will give his bees a chance to gather. He will sow both yellow and white varieties so as to give a longer season and for a study of comparative values. There will be some income from the sweet clover for pasture and for seed, but the honey he can produce from it is the primary consideration.

Reporter.

## Hillman Suffers Injury

"Uncle" Dan Hillman, State Bee Inspector of Utah, suffered an injury that put him in bed for a while and seriously interfered with his efforts to keep his state in the list of states having less than two per cent of foul-brood. A rotten hive cover on which he was seated while inspecting gave way and precipitated him backwards on some stones. Get rid of poor hive covers. Dangerous for bees as well as for inspectors. Reporter.

# Bigger Profits from Bees

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duction of Honey.

By DR. E. F. PHILLIPS

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A former bee specialist, now a honey marketing expert, says, "I used the first edition of BEEKEEPING daily in answering the questions of beekeepers. I've read it through at least ten times and still get new information from it. No other bee book is as full of meat, and I can say that the revised edition is even better." Get your information first-hand from the book itself.

### A Recognized Authority

Even those who are themselves ranked as experts never lose an opportunity for further study under Dr. Phillips at Cornell. This year, for example, the men in charge of beekeeping work in two western states are coming east for further work with him. The new BEEKEEPING contains the fundamentals which have made the author the recognized authority.

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That Get The Honey  
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Good Untested, one grade,  
60c each. Tested, \$1.50.

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# Beekeepers Save from \$10 to \$20 on Honey Extractors

*The Best on the Market at the Lowest Price*



The Superior two-frame Reversible Honey Extractors have no throw-out clutch with broken gears. No mechanical handle release with wire spring and loose pin, but a simple automatic handle release worked by the turning of the shaft leaving the handle always idle while the reel spins. Our pockets are strong, rigid, and indestructible. Heavy ball bearings top and bottom, full flow honey gate. Reels are made of Galvanized steel, others use black steel painted.

Sold on **Money Back Guarantee** backed by 56 years record for fair dealing. We sell only through Dealers but if your Dealer does not sell our Extractors we will ship you direct from the Factory at the following astonishingly low prices.

Size	Pockets	Ship Wt.	Price
No. 15.....	9 $\frac{5}{8}$ x 16	90 lbs.	\$23.75
No. 17.....	12 x 16	110 lbs.	28.75
No. 20.....	14 x 16	120 lbs.	33.75

You have always paid too high a price for Honey Extractors.

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*The Small Beekeeper* has always wanted and needed a low priced Honey Extractor so that he can get full production from his bees. This can now be had for... **\$8.15**

Not 100% perfect like the Superior Reversible but 98-3/10% by actual test.

Turn reel in one direction for 1 $\frac{1}{4}$  minutes and opposite direction the same time. A practically continuous operation. Don't have to remove comb until all honey is extracted. Every comb honey producer needs it for unfinished sections. Where Dr. Hutzelman's solution is used for curing foul brood it will save the solution which otherwise would evaporate. Gears and reel easily removed to use tank for bottling or honey storage. Made in two sizes.

Size	Pockets	Ship Wt.	Price
No. 3.....	9 $\frac{5}{8}$ x 16	25 lbs.	\$8.15
No. 7.....	12 x 16	30 lbs.	10.65

Beekeepers, remember if your Dealer does not sell them send your order to us and we will ship promptly.

### HONEY STORAGE TANKS

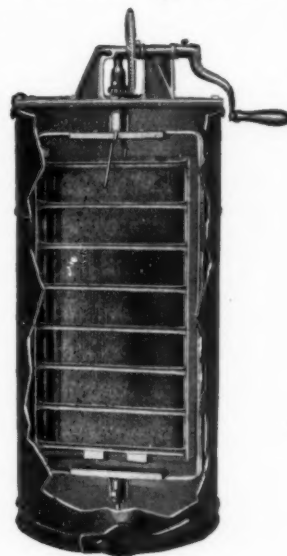
Conical bottom, drained to full flow honey gate. Heavy galvanized steel throughout. Bottom and outside of tank heavily enameled. Malleable tinned drop handles. Built to last a lifetime.

Size	Ship Wt.	Price
No. 40— 40 gal.....	55 lbs.	\$8.15
No. 60— 60 gal.....	69 lbs.	10.30
No. 100—100 gal.....	90 lbs.	13.10

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*For 56 years building honest goods and giving fair, square, honest treatment*

**WAPAKONETA, OHIO**



# Crop and Market Report

Compiled by M. G. Dadant

For our August report, we asked our correspondents to advise us as to the total crop up to time report was sent in and the possibilities for future crop. In addition, we asked for recommendations for prices on honey, as we did last year.

## The Honey Crop

Weather conditions this year undoubtedly had the effect of delaying the early crop of honey at least two or three weeks, but, on the other hand, the rains undoubtedly have also prolonged the crop a similar length of time. Another factor is that the growing of sweet clover throughout the Central West is undoubtedly having its effect in prolonging the crop through the summer months, whereas there used to be a cutoff of the crop immediately after white clover and a lull in production which amounted to a complete lack of storage until the fall crop set in in some favorable sections.

Without a doubt, the reports coming in would indicate that the total crop for 1928 will not be as much as it was for the 1927 season.

A number of states are reporting a larger crop than last year and, roughly stating, they are as follows: Maine, 110%; New York and North Carolina, 140%; Georgia, 140%; Florida, 250%; Alabama, 125%; Missouri, 110%; Western Iowa, 120%; South Dakota, 175%; North Dakota, 110%; Nebraska, 110%; Kansas, 120%; Louisiana, 175%; Nevada, 110%; Wyoming, 150%.

Others are reporting considerable shortage from 1927. These are as follows: Ohio, 40%; Indiana, 80%; Illinois, 50%; Iowa, 50%; Wisconsin, 40%; Oklahoma, 50%; Texas, 80%; Colorado, 75%; California, 60%; Arizona, 75%; New Mexico, 75%.

We may roughly state that the balance of the states will perhaps have a production somewhere near equal of last year, but depending somewhat on the crop from now on.

The reports from California, in view of the fact that last year was a very short crop, would indicate that this year approaches a failure, except in the northern

section and Imperial Valley, where a normal crop will be secured.

The clover belt, although it has rallied somewhat from earlier reports, is most certainly not going to be anywhere near the equal of last year. In fact, some sections are reporting failures, whereas a few others are reporting to have 75 per cent of last year.

The big section which is having an unusually desirable crop this year in the plains area, which is carrying out the earlier predictions.

The Southeast will be far improved over last year, inasmuch as a number of these states had a partial failure last season. However, this crop will not figure largely in the shipments to the larger centers because they have a demand for their own honey which will undoubtedly take care of the crop. There may be a few amber honeys which will seek the larger market.

All in all, we feel very much encouraged over the possibilities of desirable prices this year, in view of the fact that the supply of table honey is undoubtedly going to be considerably short of 1927, and the carryover is also limited compared to the year previous.

In our price recommendations, there are few changes over the August issue last season. In some instances, the price suggested has been raised somewhat and others lowered so as to even them up.

Please, dear reader, do not assume that these prices should govern you entirely, because it was very difficult for the writer to set a basis owing to the fact that the prices sent in by reporters were of such wide variance. The prices as submitted below are a general average, in most instances being neither the lowest or highest submitted, but probably running above the average submitted. We believe our readers will agree that they are not any higher than honey should sell and give remunerative profit to the producer.

We submit these prices for what they are worth, and will be glad to have our readers write us suggestions for any revision.

We call special attention to the fact that bulk comb honey prices are now being quoted in other sections than the South and Southeast. As a matter of fact, the sale of bulk comb honey is undoubtedly spreading, and we are wondering if in time it will not be of common sale, even in the northern states where the difficulties of granulation have to be encountered.

Summary of honey selling prices are submitted below.

## SUGGESTED SELLING PRICES HONEY—1928-29

In figuring sales to retailers deduct 20 per cent from retail price below. For jobbers, deduct an additional 10 to 15 per cent. Prices suggested are for good white grade. For amber, deduct 1 cent per pound.

	New England	Atlantic Coast	South- east	Central West	Plains	Louisiana- Texas	South- west	Inter- mountain	North- west	Calif- ornia	East Canada	West Canada
16-Ounce Jar	\$ .40	\$ .35	\$ .30	\$ .25	\$ .25	\$ .25	\$ .25	\$ .25	\$ .25	\$ .30		
2 1/2-Pound Can	.75	.70	.60	.60	.60	.60	.50	.50	.60	.60		
5-Pound Pail	1.25	1.15	1.00	1.00	1.00	1.00	.90	.90	.90	1.00	1.00	.90
10-Pound Pail	2.25	2.25	1.80	1.90	1.80	1.75	1.75	1.75	1.75	1.75	2.00	1.75
60-Pound Can	.16	.14	.14	.14	.12 1/2	.12	.12	.12	.11	.12	.13	.13
10-60-Pound Can	.13	.12	.12	.12	.11	.10	.09	.10	.10	.10	.12	.12
Carlot, 2-60		.10	.09	.10	.09	.08	.08	.08	.09	.08 1/2		
Barrels			.09	.09		.08						
2 1/2-Pound Bulk Comb	.65	.65	.60			.70						
5-Pound Bulk Comb	1.40	1.40	1.10			1.25	1.10					
10-Pound Bulk Comb	2.75	2.75	2.25			2.25	2.10					
Comb, Single Section	.40	.35	.30	.30	.30			.25	.25			
Comb, Fancy, Case	7.00	6.50	5.50	5.50	5.00			5.50	5.50			
Comb, No. 1, Case	6.00	6.00	5.25	5.00	4.50			5.00	5.00			
Comb, Choice, Case	5.50	5.75	4.75	4.75	4.00			4.50	4.50			
Comb, Fancy, Carlot							4.50	5.00	5.00			
Comb, No. 1, Carlot							4.20	4.50	4.25			
Comb, Choice, Carlot							3.90	3.75	3.75			

## CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 7c per word, with no discounts. No classified advertisements accepted for less than 49c. Count each initial or number as one word.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is free from disease or be accompanied either by a certificate of inspection from an authorized inspector or agreement made to furnish such certificate at the time of sale.

### BEEES AND QUEENS

**QUEENS** guaranteed to be as good as can be reared. 1-9, 55c; 10 up, 50c each. N. B. Smith Co., Calhoun, Ala.

**REACROFT**, Italian bees that please. Select queens, \$1.00 each. Satisfaction guaranteed. George H. Rea, Reynoldsville, Pa.

**FOR SALE**—Three-banded Italian queens. Untested, \$1.00 each; six, \$5.50; twelve, \$10. Tested queens, \$1.50 each. Robert B. Spicer, Wharton, N. J.

**FOR SALE**—Water white sweet clover honey, North Dakota's best. Victor Apiaries, Chaffee, N. Dak.

**CAUCASIANS**—Bred from very best imported breeding stock. Untested, each \$1.50; six, \$8.00; dozen, \$15.00. Write for prices on tested and breeding queens. Bolling Bee Co., Bolling, Ala.

**NORTHERN** queens, three-banded, leather-colored Italians. Untested, \$1.00; twenty or more, 90 cents each. Hopkins Apiaries, Withrow, Minn.

**STOP, LOOK**—To advertise our famous Carolina queens to new customers, we will sell two of our select untested queens at the price of one. Two for \$1.25. Will exchange queens for honey. Carolina Bee Co., W. O. Curtis, Mgr., Graham, N. C.

**IF** you want bees that are gentle to handle, good honey gatherers and beautiful to look at, my strain of golden Italians will please you. Prices: Untested, \$1.00; 6, \$5.25; 12 to 49, 75c each; 50 or more, 70c each. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

**"PRODUCTION-BRED"** three-banded Italian queens that will produce real workers. Select untested, 80c each; 6, \$4.50; 12, \$9.00; 50, \$35.00; 100, \$60.00. Virgin queens 50c each. Satisfaction guaranteed. A. E. Crandall, Berlin, Conn.

**GOLDEN** Italian queens, the big, bright, hustling kind (the kind that will please you). Untested, balance of season, 75 cents each. Tested, \$1.25; 100, \$60.00. E. F. Day, Honoraville, Ala.

**ITALIAN** QUEENS—Select untested, 65c each; twelve or more, \$7.00 per dozen. The Mangham Apiary Co., C. S. Duncan, Mangham, La.

**SOME** of the best queens that are raised, 75c each, \$8.00 per dozen, as long as they last. Graydon Bros., R. 4, Greenville, Ala.

**QUEENS** for the balance of the season, quality equal to the best. Write and get prices. O. P. Hendrix, West Point, Miss.

**GOLDEN ITALIAN** queens that produce golden bees. Very gentle, good honey gatherers. State inspected. Safe arrival, satisfaction guaranteed. Untested, \$1.00; six for \$5.40; twelve or more, 80c each. Tested, \$1.50. Select tested, \$2.50. D. T. Gaster, R. 2, Randleman, N. C.

**DON'T GUESS**—Be sure every queen you buy will arrive safely, be purely mated and give one full year's satisfactory service or be replaced free. That's our guarantee to you. Holloway Apiaries, Marietta, Okla.

**LEATHER COLORED ITALIAN QUEENS**—\$2.00; after June 1, \$1.00. Tested, \$2.00. A. W. Yates, 15 Chapman St. Hartford, Conn.

**HIGHEST** grade Italian queens—Tested, \$1.50; untested, 75 cents. Package bees, one pound, \$1.50; two pounds, \$2.50; three pounds, \$3.25. Have had no disease. State inspection certificate with each shipment. Safe delivery guaranteed. T. L. Davis, Buffalo, Leon Co., Texas.

**GOLDEN THREE-BANDED** and Carniolan queens. Tested, \$1.00; untested, 75c each. Bees in 1-pound package, \$1.50; 2 pounds, \$2.50; 3 pounds, \$3.25. Safe delivery guaranteed. C. B. Bankston, Box 65, Buffalo, Leon Co., Texas.

**LATHAM'S** "She-suits-me" three-banded untested Italian queens, \$1.50 by return mail. If ordered four weeks in advance, six queens for \$5.00, twelve for \$10, 50 for \$40, 100 for \$75. Allen Latham, Norwichtown, Conn.

**WILLIAMS' ITALIAN** queens of quality will produce a honey crop for you. They have headed big producing colonies for your neighbor. "Ask the man who owns one." Satisfaction guaranteed. Select untested, 60c each; ten or more, 50c each. Health certificate with every shipment. Seventeen years' beekeeping experience. P. M. Williams, Mt. Willing, Ala.

**FOR SALE**—Choice bright Italian queens. I have been building up this strain for 25 years for hustlers, good winterers, gentleness, and fine color. Health certificate furnished. Prices: Untested queen, \$1.25; dozen, \$12.00. Breeder, \$10.00. After September 1, \$10.00 per dozen. Emil W. Gutekunst, Colden, Erie Co., N. Y.

**PURE ITALIAN QUEENS**—Untested, \$1.00; tested, \$1.50. Two-pound package, \$3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Forty years' experience breeding and shipping bees and queens. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

**FOR SALE**—Golden Italian queens, \$1.00. Bright yellow bees; splendid honey gatherers. Cap honey a beautiful white. Once a customer, always one. Queens ready to mail May 20. J. F. Michael, R. 1, Winchester, Ind.

**THRIFTY** Caucasians of 14 years' selecting. Tested queen, \$2.00; untested, \$1.00. Safe arrival guaranteed. State inspected. Peter Schaffhauser, Havelock, N. C.

**SIMMONS** Italian queens for quality and service. One, \$1.25; six, \$7.00. Also nuclei. Fairmount Apiary, Livingston, N. Y.

**THRIFTY** Caucasian queens from daughters of imported mothers. After April 15: One, \$1.50; twelve, \$14.00. Safe arrival. Tillery Bros., Greenville, Ala., R. 6, U. S. A.

**GOLDEN UNTESTED QUEENS**—Gentle and good honey gatherers as can be found, \$2.00 each. Tested, \$4.00 each. Best breeders, \$20.00. Over thirty years a golden Italian breeder. J. B. Brockwell, Barnetts, Va.

### FOR SALE

**GIANT Spider Flower.** A great honey plant and a wonderful flower. Seed, 20 cents, sample pkt. Also Ginseng, Golden Seal and other medicinal plants and seed for planting. Write for prices. S. W. Terhune, Hawthorne, N. J.

**REXFORD'S** improved push-on comb queen introducing cage, includes all approved principles from G. M. Doolittle's day till now. No handling queen. Go to hive but once. Sample, 20c, August only. Price, 35c; three, \$1.00. O. S. Rexford, Winsted, Conn.

**TEN-ACRE** farm, outfit for 150 colonies. Elias Fox, Union Center, Wis.

**FOR SALE**—One S. P. C. Co. Cowan No. 17 honey extractor, two 12x16 pockets, reversible. Used 6 years in small apiary and in good condition. W. F. Bear, Buena Vista, Ill.

**ACREAGE** for Sale—4½ acres 1¼ miles from Harlan, 4½ miles from Omaha. Good place for bees, chickens, fruit and truck. Good well. No buildings. Price \$700. W. F. Berger, Harlan, Iowa.

**BEEES** for Sale. I have one of the largest bee outfits in the Southwest, handle honey by carload, have eighteen apiaries in the very best locations with forty thousand acres more of alfalfa and cotton being planted joining. All near railroad and cement highway. No foulbrood in our state. I run my extractor five and one-half months each year. I have been handling bees for seventy years and find them the most profitable of any rural industry. As I am alone, I will now sell part or all. Crop in hives goes with bees. Terms one-half cash, balance on time. The California freight trucks call for and deliver the honey on board of vessels for a large foreign trade. Address B. A. Hadsell, Buckeye, Ariz.

**VERDIGRE** (Nebr.) Apiary of 70 colonies and extracting equipment for sale. Guaranteed.

**SEND** for list of used extracting equipment. A complete outfit, including unused cans and jars. No disease. L. C. Worth, Lilbourn, Mo.

**FOR SALE**—Foundation, bee brushes, comb honey cartons, feeders, nailed and painted bodies, bottoms, covers and bodies, veils, sections, a big assortment of frames, excluders, comb and extracting supers k. d., and many other items in good usable condition. Reason for selling items, no longer listed in our catalog. Prices the lowest anywhere for the value. You can address G. B. Lewis Co. at Watertown, Wis.; Albany, N. Y.; Lynchburg, Va.; Texarkana, Ark., or Sioux City, Iowa.

**FOR SALE**—We are constantly accumulating bee supplies, slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

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**FOR SALE**—Extracted and Chunk Honey. New crop very fine; 1-lb. sample for 25c. Prices on request. F. W. Summerfield, Waterville, Ohio.

**WHITE** and **BUCKWHEAT** honeys wanted. Write us quantities each grade, how packed and lowest price will take, stating when can ship. Also quote comb honey, stating how packed, section sizes, etc. Always ready to take in large and small lots section and comb. Arthur H. Hoffman, Inc., Richmond Hill, N. Y.

**NONE BETTER** quality clover honey will soon be for sale. Expect 16,000 lbs. Will contract it for sale now. M. W. Thompson, Toronto, S. Dak.

**WANTED**—Honey in 5-pound pails. F. Chatham, Carbondale, Ill.

**FOR SALE**—Extracted honey, clover and buckwheat. Stephen Schenhofen, Albert Lea, Minn.

**FOR SALE**—New crop white clover honey. Will be ready about Aug. 15. Price on request. Jos. H. Hoehn, Ottoville, Ohio.

**WANTED**—White clover comb honey. Name your best cash price delivered. M. V. Facey Honey Co., Preston, Minn.

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**WANTED**—Car of white extracted honey. L. D. Taylor, Chandler, Okla.

**CLOVER** and fall amber honey in sixties. O. W. Taylor, Griggsville, Ill.

**NEW HONEY**—White Clover comb No. 1. \$4.50 per case. Fancy white extracted, in 60-lb. cans, 11c. F. J. Smith, Castalia, Ohio.

**NEW CROP**—Gallberry and Palmetto blended, extracted honey, 50-gallon barrels at \$1.08 per gallon; 5-gallon cans at \$1.20 per gallon. Sample 10c. This honey retails at 35c pound glass jar in this locality. S. C. Ellenwood, Box 239, Daytona Beach, Fla.

**HONEY** wanted. Always in the market. Any quantity, any grade; extracted or comb. We pay cash. Hoffman & Hauck, Inc., Ozone Park, N. Y.

NEW crop shallow frame comb honey, also section honey; nice, white stock, securely packed. Available for shipment July 15. The Colorado Honey Producers' Association, Denver, Colo.

FANCY white clover extracted honey, any sizes. Prices and samples on request. Kalona Honey Company, Kalona, Iowa.

PARTIES wishing extra fine honey reasonable, any time, write Lee Horning, a Producer, Morrison, Ill.

HONEY (comb and extracted), pure maple syrup, maple sugar and sorghum molasses. Special price to quantity buyers. C. J. Morrison, South Bend, Ind, 1235 Lincoln Way West.

STURDEVANT, St. Paul, Nebraska. Finest quality clover honey.

WANTED—A car or less quantity of white honey in 60-lb cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, Birmingham, Mich.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

FANCY white tupelo extracted and bulk comb, packed in five-pound tin. J. L. Morgan, Tupelo Apiaries, Apalachicola Fla.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co., 217 Broadway, New York.

HONEY FOR SALE—In 60-lb. tins. White clover at 12c lb.; white sage at 12c lb.; white orange at 14c lb.; extra L. A. sage at 11c lb.; Hoffman & Hauck, Inc., Ozone Park, New York.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request. Dadant & Sons, Hamilton, Illinois.

SHALLOW frame white comb honey and white extracted honey. The Colorado Honey Prod. Ass'n, Denver, Colo.

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"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. O. B. Fromberg, Montana. Beeswax wanted. Write for prices. B. F. Smith, Jr., Fromberg, Mont.

### MISCELLANEOUS

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Sistema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

YOU can read in either English or French the report of the Seventh International Congress of Beekeepers held at Quebec, September 1-4, 1924. Not more than a dozen copies left. Orders filled in rotation. Postpaid, \$2.25. American Bee Journal.

GLEANINGS IN BEE CULTURE, published at Medina, Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is George S. Demuth. Its field editor is E. R. Root. Ask for sample copy.

WESTERN HONEY BEE 2823 E. 4th St., Los Angeles, Calif., published by Western beekeepers, where commercial honey production is farther advanced than in any other section of the world. \$1.00 per year. Send for sample copy.

BARGAIN in bee papers. Three best in U. S. "Bees and Honey" and "American Bee Journal," each one year, and "Gleanings," two years—all for only \$2.50 in U. S. Order from Bees and Honey. (Sample copy free.) George W. York, Seattle, Wash.

WILL EXCHANGE reversible extractor for honey in 10-pound pails. Ames Hatchery, Deerfield, Wisconsin.

MAKE queen introduction sure. One Safin cage by mail, 25c; 5 for \$1.00. Allen Latham, Norwichtown, Conn.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list. American Bee Journal, Hamilton, Ill.

### WANTED

WANTED—Shipments of old comb and capings for rendering. We pay the highest cash and trade prices charging but 5c a pound for wax rendering.

Fred W. Muth Co.  
204 Walnut St., Cincinnati Ohio.

### RABBITS

RABBITS—Make big profits with Chinchilla rabbits. Real money makers. Write for facts. 824 Conrad's Ranch, Denver, Colo.

## Bad Effect of Stings

By O. B. Griffin

After keeping bees for more than thirty years on a Maine farm, we are obliged to move them to some other place. We have been unable, so far, to locate them near home. Nearly everyone approached doesn't want a bee on the place. We will be forced to purchase more land than we need for the bees in order to have them at a distance from neighbors.

We cannot decide to sell the bees and give them up for good, for they have been a large part of our life for too long a time. The removal of the bees is necessary because of the fact that the better half cannot take chances of being stung. One sting would in all probability prove fatal. She has been stung twice in twenty-one years, the last time fourteen years ago, when she was unconscious for twenty minutes and had a convulsion. By keeping the bees at a distance from the house, we have felt reasonably safe against the danger of her being stung.

Now one son has developed the same trouble, or is affected in much the same way, and the danger is more than two fold, as the son works in the fields. The bees will have to go at any cost, but it will not be easy for the writer. In our love for the bees, we have, no doubt, taken risk to the wife that we should not have taken. When we must choose between wife and son, or the bees, the bees will have to move.

I believe it will be of interest to beekeepers to know how the sting affects her, and I will give a brief account. The last time, in November, when the bees were put in the cellar one was brought into the house in some way, and barely able to crawl, made its way up under her clothes and stung her on the thigh. She barely felt it, but discovered the bee, when it dropped on the floor. It was so slight that she thought it would do no harm, but within five minutes her tongue began to feel thick and prickly. A few moments later she could not swallow and was breathing with difficulty. Within ten minutes she was unconscious and convulsion

followed. This happened at evening and she had recovered enough to be put to bed in an hour. She slept normally and in the morning felt little effects of the experience, except for swollen eyelids, lips, face and ears. After the first experience, the blood settled under the nails. Lips, eyelids and ears were swollen greatly and nearly purple. Throat muscles seemed to paralyze.

The son has many of the same symptoms but breathing is more difficult and he is frantic with an itching sensation. White blotches appear on him. He does not swell much, but complains of his head feeling as though it would burst and several times normal size. He has difficulty in swallowing, but has never lost consciousness. He has been stung only twice, once when small, and again last season.

The wife is affected by the sting of a hornet or wasp but not so badly. Stung by a sweat bee on the leg, it was swollen and hard for days and the itching was hard to bear.

Has anyone a similar experience, and has anyone a remedy that could be applied or given in time to be of any use in case they should be stung again? This may happen with others.

Maine.

(The wife of the Associate Editor suffers similar effects from stings. In the November, 1915, issue of this magazine there is an account of the serious illness of Mrs. Pellett from a sting. In the May, 1927, issue, Dr. W. Ray Jones gives an emergency treatment for bee stings.—Ed.)

50c

Select untested Italian Queens, Fifty cents each any number after July 15th. Pure mating, safe arrival and perfect satisfaction guaranteed.

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J. J. SCOTT, Prop.

Crowville, La.

**HODGSON'S**  
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is just right for a portable extracting outfit. Its light weight (240 pounds), and the fact that the smallest gasoline engine will run it, make it the best portable power machine made.

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and take chances with just ordinary queens when the best cost so little. Our queens are well known for their hardiness, prolificness, gentleness, and honey-gathering qualities. Safe arrival and satisfaction guaranteed. Health certificate with each shipment.

One untested, 80c; twelve for \$9.00. One select untested, \$1.00; twelve for \$10.00. Tested, \$1.50; twelve for \$15.00.

Write for descriptive circular and prices on quantities

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The kind we use in our extensive Michigan Apiaries, where we produced 92 TONS of honey last season.

Choice Untested Italian Queens  
75c each

Tested, 50c each extra

Write for prices in large quantities. All queens sent from Sumterville, Ala. Address for QUICK service,

**DAVID RUNNING**  
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## YANCEY HUSTLER QUEENS 50c each by the hundred

3-Band Italians. Only one grade: Select.

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In Strong Dust-Proof Cartons—Pails with Sure-On-Bails

	Shipment from Grand Rapids			Shipment from Chicago			
	Per 100	Per 500	Per 1000	Per 100	Per 500	Per 1000	
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50 in carton	\$3.75	\$17.75	\$34.00	\$3.25	\$15.75	\$30.80	
5-pound pails							
50 in carton	\$6.50	\$31.35	\$60.00	\$5.75	\$27.50	\$53.75	
10-pound pails							
50 in carton	\$9.50	\$46.00	\$88.25	\$8.00	\$39.25	\$76.75	
2 1/2-pound cans							
24 in wood box			\$10.00	\$9.50	\$45.00		
5-pound pails							
12 in wood box			\$10.50	\$9.00	\$44.00		
10-pound pails							
6 in wood box			\$8.00	\$7.00	\$32.50		
60-pound cans							
2 in wood box			\$10.00	\$9.00	\$43.50	\$85.00	
50 bulk crate			Per crate \$17.50	Per crate \$15.00			

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Breeding Queens, none better, \$5.00 each. Service guaranteed for one season.

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VIGOROUS YOUNG ITALIANS, BRED FOR SERVICE

They are reared in strong colonies and mated from strong nuclei. We can fill your order promptly.

Select young laying queens now 75c each; five or more, 70c each; twenty or more, 65c each. Tested queens, \$1.50 each

**W. D. ACHORD, Fitzpatrick, Ala.**

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Any number **50c each** Balance of Season  
 REARED BY PRACTICAL, EXPERIENCED QUEEN-BREEDERS;  
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No disease, and safe arrival of all queens guaranteed.  
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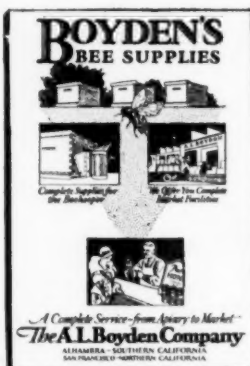
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## QUEENS ITALIANS (three-banded)

**50c**

SATISFACTION GUARANTEED

**W. A. WHITMIRE, Milton, Fla.**

...24 Hour Service...

## DIEMER'S THREE BANDED BRIGHT ITALIAN QUEENS

After June 15, Select Untested—

4 or less	\$1.00 each
5 to 10	.90 each
11 to 20	.85 each
21 to 50	.80 each
51 to 100	.75 each
Tested	1.50 each

Queens sent in introducing cages.  
 Write for Booklet giving principle of queen introduction.

**J. F. DIEMER, Liberty, Mo.**

## CARNIOLANS



are very gentle, very prolific at all times, build very white combs, are little inclined to rob, rarely affected with European foulbrood, and are most excellent workers. Average surplus from producing colonies during 1927 was 180 lbs extracted. Carniolans are excellent workers on buckwheat. If located in buckwheat regions try some Carniolans.

We have been breeding Carniolans for the past 21 years, several breeders imported each year—Jan Strgar and M. Ambrozic stock. We have supplied queens to many Agricultural Colleges and Experiment Stations and to the Japanese Government for breeding purposes. We probably have the finest Carniolans in the United States. Ask for our free paper "MERITS OF THE CARNIOLAN BEE".

Untested queens, one	— \$ 1.35
Untested queens, six	— 6.60
Untested queens, dozen	— 12.00
Tested queens	— 2.25

Ask for prices in larger quantities. Queens reared here during the buckwheat flow in August are the very finest. During August is a good time to replace old or failing queens.

**ALBERT G. HANN**  
 Glen Gardner, New Jersey

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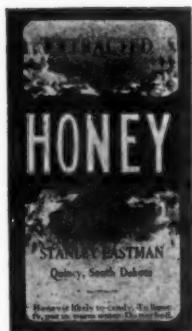
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Our catalogue contains some snappy new designs and we still have the old stand-bys that have been favorites with honey producers for many years.

Send for Catalogue now  
A Post Card is all it costs

**American  
Bee Journal**

Hamilton, Illinois

## GOLDEN ITALIAN QUEENS

Only One Grade, Select. Safe Arrival and Satisfaction Guaranteed.  
Untested \$1.00; 6 for \$5.00; 12 for \$10.00

**E. A. SIMMONS, GREENVILLE, ALABAMA**

## LEININGER'S STRAIN OF ITALIANS

BRED FOR BUSINESS

Beginning June 1, we will sell queens from this famous strain at the following prices. 1 to 5, \$1.00 each; 6, \$5.50; 12, \$10.50; 100, \$85.00. Tested, \$1.50. Breeders, \$10.00 each.

**FRED LEININGER & SON, Delphos, Ohio**

## CANADIAN BEEKEEPERS

### "Chrysler's Process Foundation"

Government tests prove to be the "Best by Test Kind." Made of pure Beeswax. Perfect refining and milling. Thirty-five years' experience. Satisfaction guaranteed.

Other supplies manufactured. Best goods at lowest prices  
Send for Catalogue

**W. A. CHRYSLER & SON, Chatham, Ont.**

## 50c--HUMMER GOLD STAR QUEENS--50c

Not Goldens but the best light colored three band Italians we are able to develop. Any number from one to 1000. Requeen with this strain and note the better results.

**GEO. A. HUMMER AND SON  
PRAIRIE POINT, MISS.**

## TENNESSEE-BRED QUEENS

Sixty-eight Years with Bees and Fifty-six Years a Queen Breeder. Breed Three-Band Italians Only

	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12
Untested	\$2 00	\$ 8 50	\$15 00	\$1 50	\$ 7 50	\$13 50	\$1 25	\$ 6 50	\$11 50
Select Untested	2 25	9 50	18 00	1 75	9 00	15 00	1 50	7 50	13 50
Tested	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
Select Tested	3 50	19 50	35 00	3 00	16 50	30 00	2 75	15 00	21 00

Select tested, for breeding, \$7.50

The very best queen, tested for breeding, \$15.00

**JOHN M. DAVIS, Spring Hill, Tenn.**

## QUEENS of HIGHEST QUALITY

AND

### MOST CAREFUL BREEDING

Prices: 1 to 4 inclusive, \$1.50 each; 5 to 9 inclusive, \$1.45 each; 10 to 24 inclusive, \$1.40 each; 25 to 49 inclusive, \$1.35 each; 50 to 74 inclusive, \$1.30 each; 75 to 99 inclusive, \$1.25 each; 100 or more, \$1.20 each. Breeders, \$10.00 each.

Write for our free book "About Bees."

**JAY SMITH, Route Three, Vincennes, Indiana**

Who

**S. E. MERRILL**

Wishes to thank the good customers that favored him with so many orders while operating The Citronelle Apiaries, and wishes to continue supplying them under the name of Citronelle Bee Co.

Nothing supplied but first quality Italian queens—Untested, 50c each, any quantity; Tested, \$1.00 each.

**CITRONELLE BEE CO., Citronelle, Ala.**

## Beekeepers Take Notice

For thirty years we have specialized in the manufacture of **Sections** from the whitest selected Wisconsin basswood

We also manufacture hives, supers, frames and shipping cases

Write for our free illustrated catalog

**Marshfield Manufacturing Company**  
Marshfield, Wisconsin

## Morrison's Three Banded Italian Queens

If you want Italian queens with years of selection and breeding back of them for qualities such as gentleness, honey gathering, less inclined to swarm, and capping their honey white, requeen with Morrison's Line Bred Stock. We have the stock and know the business.

Prices are as follows: 1 (one) \$1.00; 6 (six) \$5.50; 12 (twelve) \$10.00; 25 or more, 80c each. Tested, \$1.50 each, in any number. Breeders, \$5.00 and \$7.50 each.

Safe arrival and perfect satisfaction guaranteed

**GEO. MORRISON, P. O. Box 65, Mandale, Ohio**

## ITALIAN QUEENS

For Summer and Fall Requeening

**80c each; \$9.00 per dozen**

**R. E. LaBARRE, Box 1042, Tulare, Calif.**

## QUEENS! QUEENS!!

Palmetto Italian Queens have a record of 400 sections of comb honey per colony. The Queens are right and the prices are right. Booking June, July and August orders at following prices: One Queen 50c; half dozen, \$2.80; dozen, \$5.40; thirteen to 100 40c each.

**C. G. ELLISON, Belton, S. C.**

## Mack's Queens

### 3 BAND ITALIANS

**Are Extra Hardy.**

They are northern bred.

**Are Extremely Prolific.**

They make rousing big colonies.

**And They Produce Such Nice Big Yellow Ambitious Bees.**

OUR PRIDE. Your desire.

Just talk to any one of MACK'S many customers and see what they tell you about them. If our queens, prices and service don't satisfy you it's hardly worth while for any one else to try it. We are after satisfied customers and it takes GOOD QUEENS to win and hold them. If they satisfy us we know they will satisfy you.

### Prices after July 1st

\$ .75c each; \$8.40 doz.; \$60.00 a 100

If they don't please you return them and we will return your money and pay you for your time and trouble besides.

**Herman McConnell**

(The Bee and Honey Man)

Robinson Route 2 Illinois

Telephone and Telegraph Oblong, Ill.

## Honey Containers

Of all kinds

At right prices

Quality unsurpassed

Fall Price List on request

See our full page ad on page 389

**DADANT & SONS**  
Hamilton, Illinois

### MANY THOUSANDS OF HOLLOPETER'S BREAD AND BUTTER QUEENS

Have gone to practical beekeepers who make bees pay, in U. S. and Canada. Northern bred from hardy, prolific great working stock they meet exactly the needs of successful beekeepers everywhere.

Requeen now with this strain of Italians. Queens are at their best and prompt service and safe arrival assured.

Untested Queens, 1, \$1.00; 5, \$4.50; 10, \$8.50; 20, \$16.00; 50 to 100, 70c each.

**J. B. HOLLOPETER**  
Rockton, Pa., L. B. 80

### NORTHERN QUEENS

That produce gentle three-banded, leather-colored bees. Unexcelled honey gatherers. Safe arrival and entire satisfaction guaranteed.

Untested, \$1.00  
20 or more \$.90 each  
Tested \$2.00

**HOPKINS APIARIES**  
WITHROW, MINN.

### Save Time -- Save Worry

**Dadant's Wired Foundation**

Can be nailed into Lewis Slotted Bottom Bar in a jiffy. And such wonderful combs!

Sold by all Dealers in Lewis  
Beeware and Dadant's Foundation

### MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as **MOORE'S STRAIN OF ITALIANS**, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. A. K. Whidden, San Jacinto, Cal., says: "In 1913, 80 per cent of the bees in this district died of European foulbrood. I had an apiary of 60 colonies headed by daughters of your queens in which I did not lose a colony, and in 1914 they made 360 pounds per colony."

"In 1917 I bought 12 queens of you and introduced them to diseased colonies. Four of them became too weak to recover, and they all got rapidly worse until it looked impossible for any of them to recover. In eight of them, as soon as the young bees from your queens began to hatch, the disease began to disappear. They cleaned up and stayed clean."

I am now filling orders by return mail.

Untested queens, \$1.00; 6, \$5.00; 12, \$9.00. Select untested, \$1.25; 6, \$8.00; 12, \$11.00. Safe arrival and satisfaction guaranteed. Circular free.

**J. P. MOORE**  
MORGAN, KENTUCKY

### ITALIAN QUEENS as GOOD as the BEST

One, \$1.00; six, \$5.00; twelve, \$9.00

Every queen absolutely guaranteed in every way. You are the judge

**ROY S. WEAVER & BRO., Courtney, Texas**

## Ruddy's

### CANADIAN MADE HONEY KNIVES



The Hardie Steam Heated Knife, Patented U. S. and Canada, is the newest and the best. Removable, cleanable copper tubing. The steam passes through the handle and the rubber hose and drip cord are behind and out of the way of the uncapper. 11 inch and 13½ inch blades.

Large capacity steamers with single or double attachments and shut off valve.

WRITE FOR PRICES

**RUDDY MANUFACTURING CO., Ltd.**  
BRANTFORD, Ontario, Canada

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### HIGH GRADE ITALIAN QUEENS HEALTH-CERTIFIED Three-Banded Only

Everyone of them carefully selected. Safe arrival and satisfaction guaranteed.  
1, 75c; 100, \$60.00. Certificate of inspection with every shipment.

**URIAH APIARIES, Box A, Uriah, Alabama, U. S. A.**



### Government Poster

"It's All Good Honey"

Size 21x30 Inches

Price 15 Cents Postpaid

From the

Superintendent of Documents,  
Washington, D. C.

Post it in a public place and it will  
do a lot of good work for you.

## WHERE IS THE MID-RIB?

*Are the mid-ribs of your  
combs at the center, and  
all the cells of the right  
depth?*

WATCH FOR OUR SEPTEMBER  
ADVERTISEMENT

### Three-Ply Airco Foundation

Our special introductory offer of  
one 10-sheet package (medium brood,  
8 1/4" x 16 3/4") postpaid \$1.00. Only  
one package to a customer.

The A. I. Root Co.  
Medina, Ohio



## Honey Containers

2 1/2-lb. cans, per 100	.....\$3.50
5-lb. pails, per 50	..... 3.25
5-lb. pails, per 100	..... 6.25
10-lb. pails, per 50	..... 4.60
10-lb. pails, per 100	..... 9.00
60-lb. cans, per case of two	1.10

All packed in Fibreboard cases, except 60-lb.  
cans which are in wood cases.

### Comb Honey Shipping Cases

Single tier to hold 24 sections, with 2 in.  
glass and corrugated paper pads.

	10	50
For 4 1/4 x 4 1/4 - 1 7/8 in.	.....\$3.90	\$19.00
For 4 1/4 x 4 1/4 - 1 1/2 in.	..... 3.70	17.50
For 4 x 5 - 1 3/8 in.	..... 3.70	17.50

*Orders shipped same day as received*

A. H. Rusch & Son Co.,  
Reedsville, Wisconsin

## Honey Wanted

### EXTRACTED

Carload or less quantities, send  
samples and advise quantity you  
have and price.

### COMB

Carload or crate lots. Must be  
sections sizes 4 1/4 x 4 1/4 x 1 7/8.  
Mention grade and quantity.

*Also Shallow Frame White  
Comb Honey*

Hoffman & Hauck, Inc.  
Ozone Park, New York

## Queens Queens

To requeen with the very best  
Three Band Italian Stock, order  
Forehand's Queens. Good stock  
and square dealing for twenty-  
five years.

1 to 12	-	55c each
12 to 24	-	53c each
25 to 100	-	50c each

### SAFE DELIVERY

and perfect satisfaction guaran-  
teed in U. S. and Canada.

N. FOREHAND  
Gonzalez, Fla.

## GET OUR PRICES

### Before Buying Beekeepers' Supplies

For your convenience we have included a coupon with this ad. Use it or write us a letter.

#### Our Guarantee

All goods purchased may be returned if unsatisfactory and money cheerfully refunded. No questions asked.

#### Our Service

While we ship all over the country, we can give special service to those located in the East—New York, Pennsylvania, New England, and Atlantic Seaboard states.

### W. T. FALCONER MFG. COMPANY

FALCONER, N. Y.

W. T. Falconer Mfg. Co., Falconer, N. Y.  
Gentlemen:

Without obligation on my part, please quote prices. I have \_\_\_\_\_ swarms.  
\_\_\_\_\_ Hives \_\_\_\_\_ Sections  
\_\_\_\_\_ Supers \_\_\_\_\_ Br. Fdn.  
\_\_\_\_\_ Frames \_\_\_\_\_ Super Fdn.  
\_\_\_\_\_ Bodies \_\_\_\_\_

Name \_\_\_\_\_  
Town \_\_\_\_\_ State \_\_\_\_\_  
Address \_\_\_\_\_

## HIGH-GRADE ITALIAN QUEENS

Now only 50c each  
Any Quantity

### Better Queens for Less Money

These are not cheap Queens but the best that can be produced regardless of price.

### BREEDING STOCK IMPORTED

Satisfaction guaranteed or money back.  
Prompt shipments.

Package Bees and Nuclei at reduced prices

## YORK BEE CO.,

H. F. YORK, Owner

JESUP, GEORGIA

Reference: Brunswick Bank and Trust Co., Jesup, Ga.



# HONEY CONTAINERS

## LOWER PRICES

### Improvements—

60 lb. cans with 2½ inch opening and a heavy handle for a man-sized grip.  
A stronger bail for pails.

### As In the Past—

Pails and cans of heavy tin plate.  
Hazel-Atlas glass jars.  
Low priced comb honey cases.  
Counter display cases.  
Extracting equipment.

Write for new illustrated  
price list.

## The A. I. Root Co. of Iowa

Council Bluffs, Iowa



## TRUE LABEL CHARACTERS

Designs that compel attention  
Colors that blend and please  
Wording that makes sales

Our labels and selling helps meet these requirements at reasonable prices

Send for catalog and samples

American Bee Journal, Hamilton, Illinois

## KNIGHT'S QUEENS

### LINE-BRED, THREE-BANDED, LEATHER-COLORED, ITALIANS

Bred for gentleness and good honey gathering qualities for 22 years. They have proven to stand the far northern climate, coming out with strong colonies in the spring.

#### PRICES:

1 select (one grade) young laying queen	\$1.00
5 select (one grade) young laying queens	4.00
10 select (one grade) young laying queens	7.50
20 or more, each	.60

All queens guaranteed pure mated and to give satisfaction. Sent in large, six-hole cages unless smaller size specified. No charge for clipping. No disease. Health certificate. Immediate shipment. Safe arrival and satisfaction guaranteed.

**JASPER KNIGHT, Hayneville, Alabama**

## QUALITY CONTAINERS

Here are the best prices on Quality Honey Containers. Containers of known quality for years. You are sure to get the best. We have large stocks and will make shipments promptly at all times.

#### WRITE FOR QUANTITY PRICES CL OR LCL

##### "DIAMOND I" FLUTED GLASS JARS

½-lb. Jars, 24 in Corrugated Paper Reshipping Case	\$ .85 per case
1-lb. Jars, 24 in Corrugated Paper Reshipping Case	1.10 per case
2-lb. Jars, 12 in Corrugated Paper Reshipping Case	.80 per case

##### "CANCO" PLAIN FRICTION TOP PAILS AND CANS

2½-lb. Cans, 100 in Corrugated Paper Carton	\$3.60 per carton
5-lb. Pails, 50 in Corrugated Paper Carton	3.15 per carton
10-lb. Pails, 50 in Corrugated Paper Carton	4.60 per carton

##### "CANCO" 60-LB. SQUARE OR FIVE GALLON CANS

Our 60-lb. cans are packed in strong wooden cases with cleated ends. This prevents splitting and insures safe delivery of your honey.

	1 to 9 cases	10 to 49 cases	50 cases or more
One 60-lb. Can in Wood Case	\$ .65	\$ .62	\$ .60
Two 60-lb. Cans in Wood Case	1.10	1.00	.98

Above Prices Net

F. O. B. Omaha, Nebraska

Write for our Complete Container Price List and Bee Supply Catalog

## W. R. PERRY COMPANY

1209 Howard Street

Omaha, Nebraska

## Packages may help or hinder sales

**W**HAT do you want your package to do? Sell more of your honey? Yes!

Canco honey pail designs are bright and colorful. They catch the eye to make more sales. And your name is prominently displayed—leading to repeat orders from satisfied customers.

Remember that a lithographed metal container can be kept clean and attractive. Dust is easily wiped off. Your advertising display is permanent and powerful.

The nearest Canco office or one of the distributors listed will be prompt to send you prices and terms.



*Brilliant in red, green and gold—Canco packages help your new and repeat business. Three sizes—2½ lb. cans, 5 and 10 lb. pails.*

Canadian Canco honey containers are now available f.o.b. Brandon and Winnipeg. Apply to Hamilton for quotations.

*Canco honey containers are distributed by*

Dadant & Sons, Hamilton, Ill.

Fargo Seed House, Fargo, N. D.

G. B. Lewis Company, Watertown, Wis.

10 Tivoli Street, Albany, N. Y.  
1304 Main Street, Lynchburg, Va.  
1921 E. 4th Street, Sioux City, Iowa  
318 E. Broad Street, Texarkana, Ark.

W. R. Perry Company  
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Mont.

Standard Lumber Co., Winona,  
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## AMERICAN CAN COMPANY

CONTAINERS OF TIN PLATE - BLACK IRON - GALVANIZED IRON - FIBRE  
METAL SIGNS AND DISPLAY FIXTURES



New York

Chicago

San Francisco

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# One-Man Machines

No Extra Help Needed



HOLDS 45 COMBS

\$190.00

FOR THE LARGE BEEKEEPER

## The Simplicity Extractor

The finest extractor for the beekeeper planning to have fifty colonies or over. It requires only one man to operate, no extra help, as the beekeeper uncaps the next load of combs while the honey is being extracted from the previous load. As a one-man machine, the Simplicity has a capacity of 5000 pounds of honey a day. With our uncapping machine and a Simplicity, one man can uncap and extract 7500 pounds a day.

You can buy the SIMPLICITY EXTRACTOR under the ROOT Easy Payment Plan. Write for full particulars

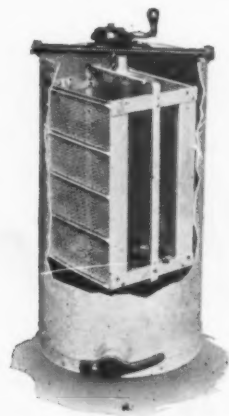
FOR THE SMALL BEEKEEPER

## The New Novice Extractor

The ideal extractor for the beekeeper with twenty-five colonies or less. It requires only one man to operate it, turns easily, extracts all the honey, and costs less than any other good extractor. As a one-man machine, the New Novice has a capacity of 1500 pounds of honey a day.

*Root Extractors Extract all the  
Honey from all the cells.*

Both the New Novice and the Simplicity are guaranteed to give absolute satisfaction, and are built to last for years.



HOLDS 2 STANDARD COMBS

\$12.75

F. O. B. MEDINA, OHIO

**Root**  
QUALITY  
BEE SUPPLIES

The A. I. Root Company

MEDINA, OHIO

**Root**  
QUALITY  
BEE SUPPLIES